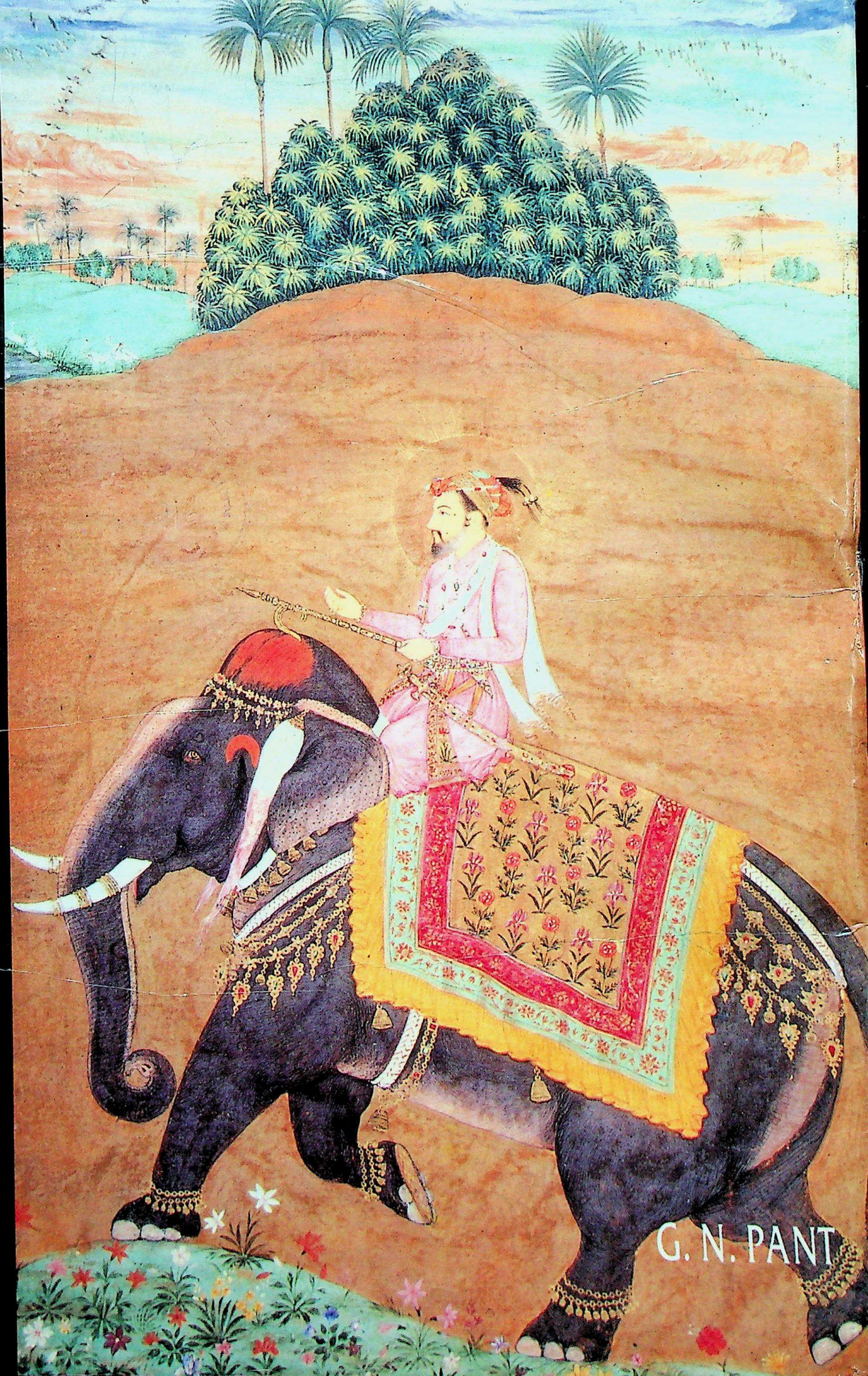
Horse & Elephant Armour



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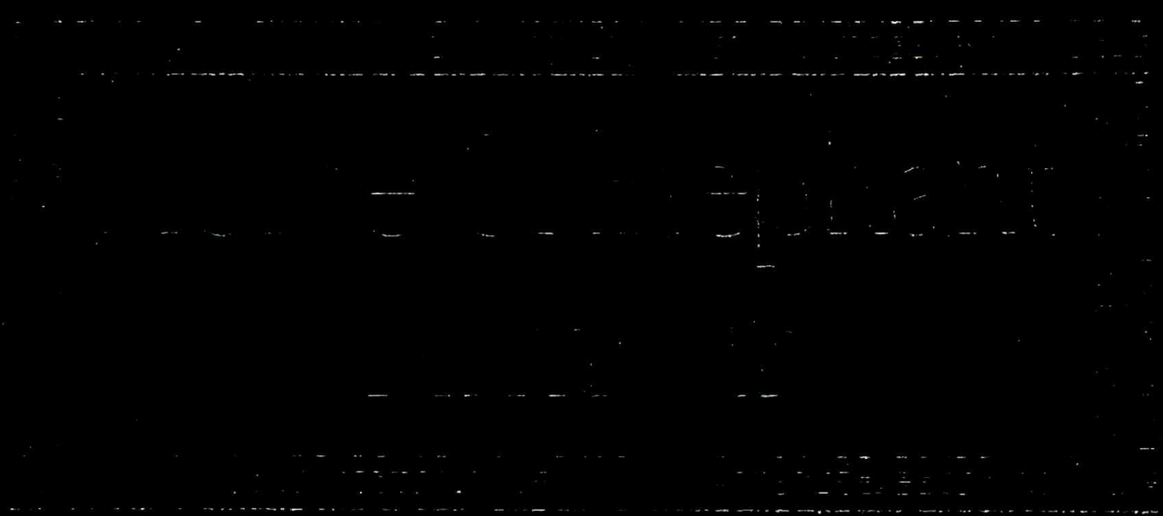

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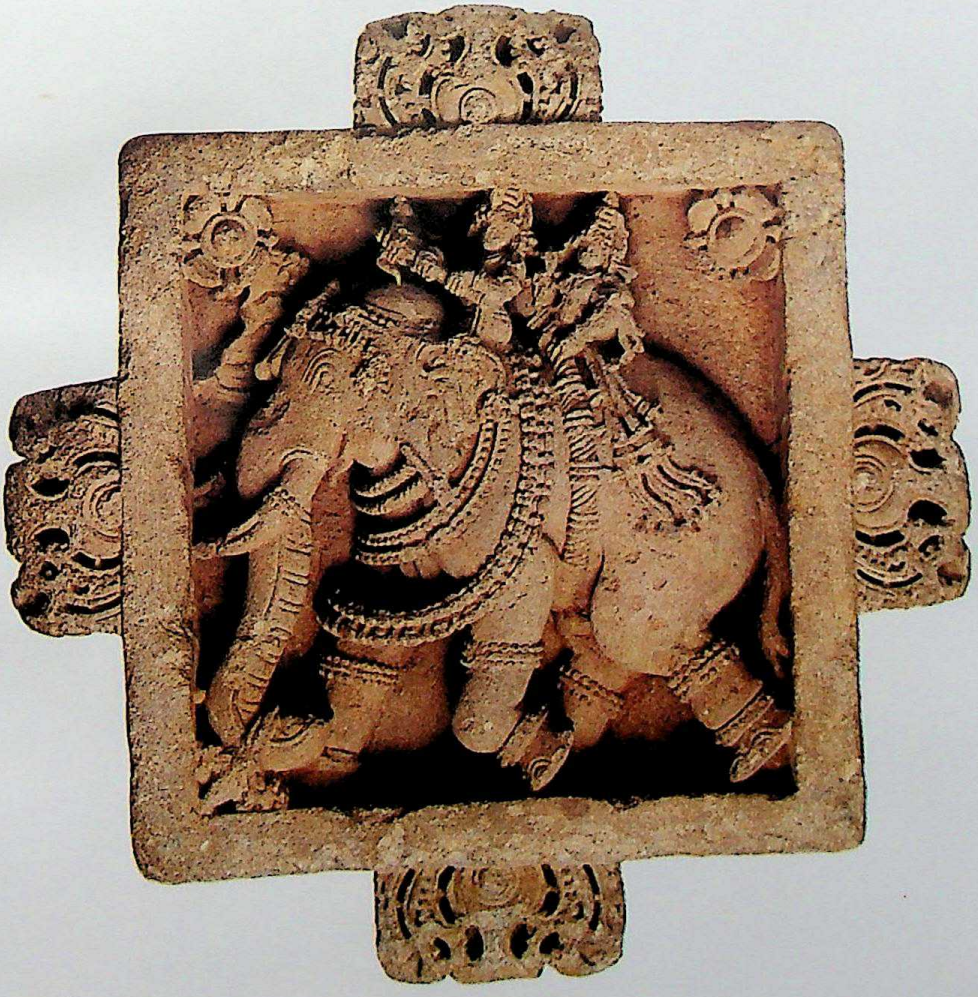

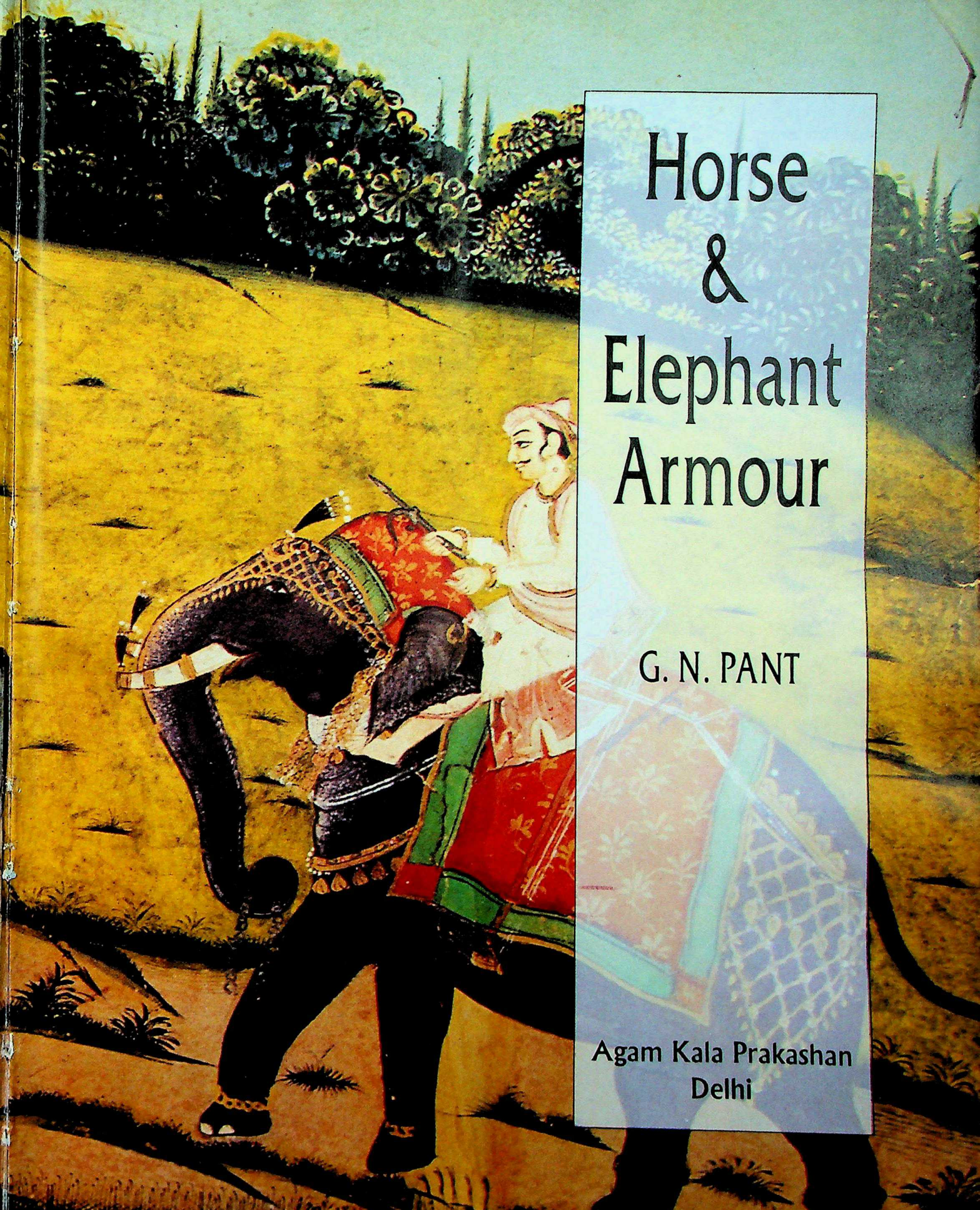

Horse & Elephant Armour

G. N. PANT

Agam Kala Prakashan
Delhi

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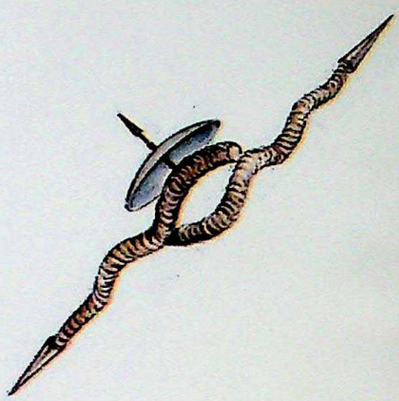

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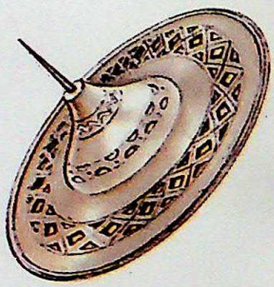

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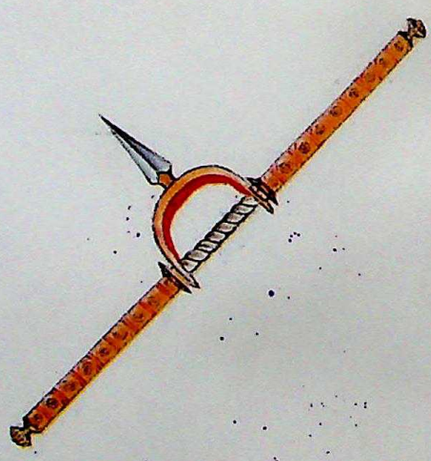

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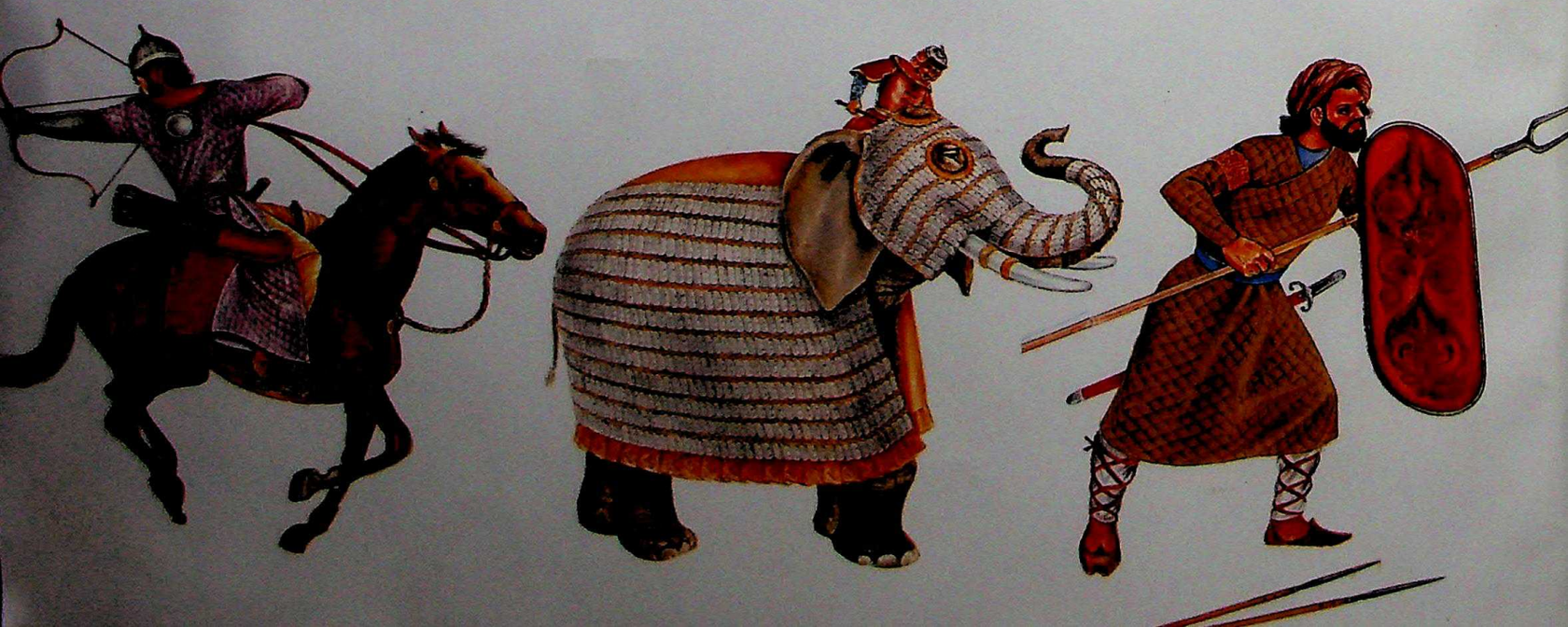

Inside ...

		Page
Preface		*xvii*
Acknowledgements		*xix*
List of Plates		*xxi*
1. INTRODUCTION : CONSTRUCTIONAL DETAILS		1
2. CAVALRY THROUGH THE AGES		13
3. HORSE ARMOUR AND HARNESS		47
4. SADDLE AND STIRRUPS		69
5. ELEPHANTRY THROUGH THE AGES		87
6. ELEPHANT ARMOUR AND HARNESS		105
7. ARMS OF THE MOUNTED WARRIORS		121
Appendix I	KAUTILYA ON ELEPHANTS	183
Appendix II	KAUTILYA ON HORSES	187
Appendix III	ANIMAL ARMOUR FROM TAXILA EXCAVATIONS	191
Appendix IV	ELEPHANT - GOAD	195
Appendix V	CALTHROPS	197
Appendix VI	ROYAL, *KHARKHANAS* OF FIRUZ TUGHLUQ	199
Appendix VII	*AIN-I-AKBARI* ON HORSES AND CAMELS	201
Appendix VIII	*AIN-I-AKBARI* ON ELEPHANTS	213
Appendix IX	ARMOURED HORSE DURING JAHANGIR	229
Appendix X	ARMOURED ELEPHANT DURING JAHANGIR	235
GLOSSARY		239
BIBLIOGRAPHY		255
INDEX		267

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STATE MUSEUM, LUCKNOW.

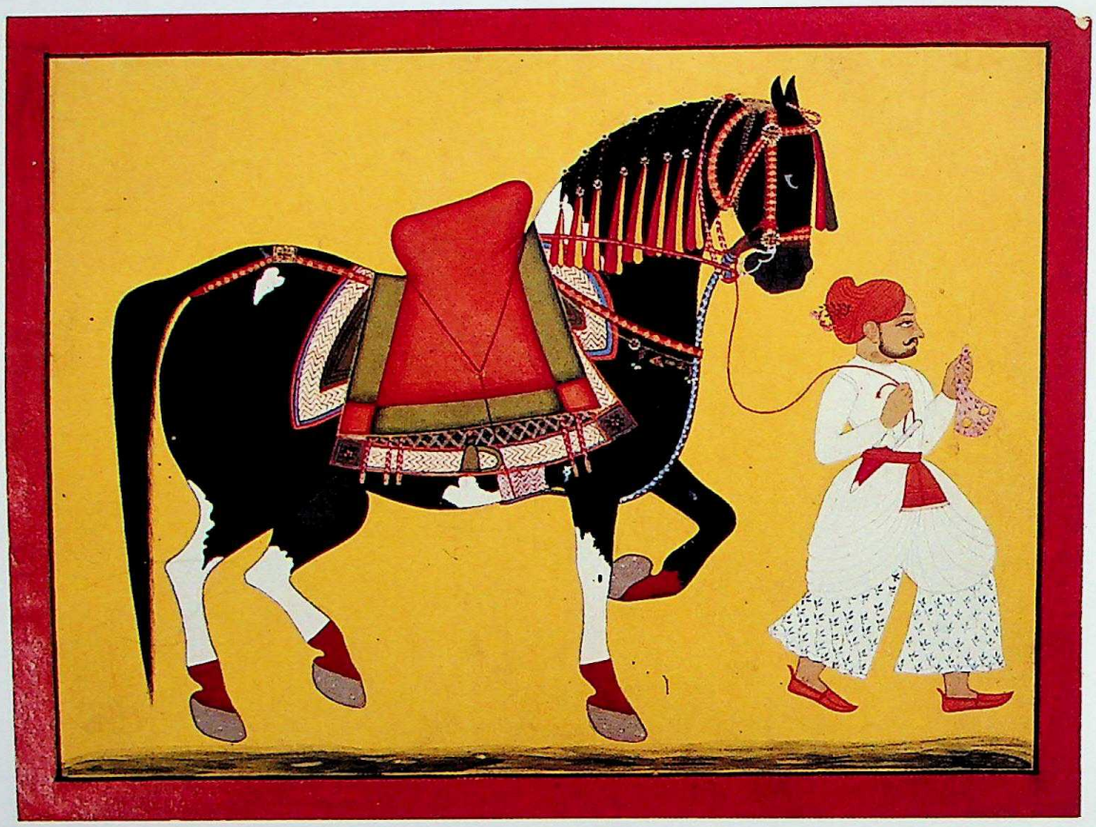
Dedicated

to

Sanjay Anu Manan

Ashish Monika

my extension of Life



PREFACE

The monograph 'Elephant and Horse Armour' is the quintessence of my 36 years labour of love. I started collecting the material right from 1960 when I joined the National Museum, New Delhi as incharge of the Department of Arms and Armour. This was my first introduction to Indian weaponry including the armour and harness for war animals. The book has taken an abnormally long time mainly because the actual examples of horse and elephant armour are extremely rare. Very few museums in India have complete horse and elephant armour either on show or in the reserve. The armouries of the erstwhile princes do not present a rosy picture either. Some of the outstanding specimens have already left the frontiers of India thus we have the saddle of Tīpū in the Zarkoe Selo Collection, Russia and the complete armour of the personal elephant of Sirājuddīn (Battle of Plassy, 1757 fame) at the Tower of London Armouries, London. We know for certain that the Mughal, Marāthā, Scindia, Nizām and a hoard of other rulers maintained large elephant corps and horse battallions, and many of these war animals, specially the ones employed in the private service of king and important knights were tastefully harnessed. Where have all these items gone ? We know not. The ravages of time, lack of antiquarian sense among the Indians, use of fire-arms that sounded death-knell for animal employment in battle *inter alia* their embelishments, the tropical Indian conditions where metallic items are corroded easily and destroyed early—may be some of the reasons for the disappearance of the 'frontale' of the horse and *jhool* of the elephant. In their heyday no attempt was made to document the technical details of these animal armour and when these items were out of use, very little was remembered about them.

True, India did not breed good quality stallions but what about the elephants ? Asia and Africa are the only two continents where elephants are found and are domesticated. Books exclusively on horses called *Ashvashāstra* (Treatise on Horse) and *Hastyashāstra* (Treatise on Elephants) were composed in the 2nd-1st millennium B.C. wherein detailed study of the habits, food, fodder, training, deseases and their cure, etc., have been made with meticulous care. During the medieval period also books on horse and elephant were written and rewritten. In every battle, big or small, horses, elephants (ānd at times camels) were given due credence. Still we are short of evidence on Indian horse and elephant armour. I have not been able to provide a satisfactory answer to this lacuna.

Another mystery. India is a land of living traditions—the artisans working on wood, ivory, metal, bamboo, lacquer, paper, cloth, stone are still busy in their professions-some of them using, by and large, the same age-old tools and techniques even today. Alas ! it is not true in case of the *Sikligars* producing animal armour and the *dhābdārs* making the shields. Today there is not a single armourer-not even one *siklīgar* for name sake-in the entire length and breadth of India who can manufacture a body armour for a horse or a trunk protector for an elephant. They only make reproductions - give them a sample of any kind with a firm commissioned order and the *siklīgars* will make an exact copy of a 'poitrel' or a 'tail-band' without even knowing as to what they have made and for whom. I travelled every nook and corner of the country and could find no one who could tell even the 'local names' of the different parts of armour pieces. The National Museum of

India at New Delhi and other reputed museums of India having arms collection do not possess a complete elephant or horse or camel armour—not to talk of smaller museums. It is a disappointing situation.

Armour, as a rule, were not preferred much in India by the men and their animals. The excessive heat makes it impossible to wear armour for longer time. The heavy weight slackened the mobility. The exhorbitant price and the lack of skilled armourers were other deterrants.

Nevertheless there still is hope. Innumerable sculptural reliefs, paintings on wall, illustrated manuscripts, depiction on coins and seals and visuals in many other forms serve as our helpmate. I collected as many references as I could and corroborated them with the literary evidences. Legends, anecdotes, historical accounts, archival material, travelogue were all sieved and whatever little grain of truth could be called, has been compiled in these pages.

I know that the monograph is full of shortcomings and I owe them. My only contribution is that it is the first and so far the only research work on horse and elephant armour in India. It should be viewed as a sincere, genuine effort made to study the subject in right earnest—nothing less, nothing more.

19.11.1996
New Delhi

G.N. Pant

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I owe a deep sense of gratitude to late Dr. L.P. Sihare who introduced me to the National Museum Institute and made me what I am today. Dr. R.C. Sharma and Shri Ashok Vajpeyi, the subsequent Director Generals, were the motivating force. My heartfelt thanks to them. The Director General, National Museum and the Director General, Archaeological Survey of India allowed me to use the photographs of the collections under their custody. I am indebted to them.

My colleagues in the National Museum Institute rendered unstined help in various ways. They all deserve kudos. I shall, however, like to single out Prof. J.L. Bhan and Shri P.K. Sharma for their affectionate encouragement which sustained me through my labours.

My friends, in service and the ones who have retired, in the National Museum like Dr. S.P. Gupta, Smt. Krishna Lal and Dr. Shashi Asthana, offered valuable suggestions from time to time. I whole-heartedly thank them.

The photographs are generally by Shri N. Shah and the sketches by Smt. Rita Dutt under the overall supervision of Sh. A.B. Manakapure. I place on record my indebtness to all of them.

No less is my gratefulness to Reva, my wife, who has lovingly inspired, nagged and driven me to complete this work.

Dr. Agam Prasad and his dynamic son Shri Rahul Singhal worked really hard and gave the book its present shape. My genuine love to both of them.

LIST OF PLATES

Pl. I — A stone medallion depicting a scene from Buddha's life. The horse here is bridled with a blanket on his back. Bharhut, Shunga, 2nd century B.C. (Archaeological Survey of India, New Delhi)

Pl. II — A throne leg of metal depicting a *vyāla* (mythical animal). Orissa, 16th century A.D. (National Museum, New Delhi Collection)

Pl. III — *Rāga Mārū*. On the upper half two cavaliers are fighting—one of the horses is fully armoured. In the lower half elephant-riders are showering arrows on a horse-rider. Painting, Malwa, *c*. 1700 A.D.

Pl. IV — A folio from an illustrated manuscript showing a story from the *Panchatantra*. The elephant, in front, is decked with *jhūl*, necklace and tusk protector. The horses yoked in chariots or driven independently are bridled and saddled. Most of the knights are armoured from head to foot. Mewar, Rajasthan, *c*. 1720 A.D. (National Museum, New Delhi Collection)

Pl. V — A cavalier riding a caparisoned horse is escorted by foot-soldiers. The bridled horse is ornamented with tassels. Painting, Nagaur school, Rajasthan, late 18th century (National Museum, New Delhi Collection)

Pl. VI — Shivaji riding a bridled and harnessed horse, He is holding a *paṭṭā* sword in his right hand and a *jamadhar* is struck to his waistbelt. All his soldiers are carrying swords and shields. Maharashtra, 17th century A.D. (from a contemporary drawing)

Pl. VII — Krishna on a horseback. The horse is covered with body armour and is ornamented with jewels. Krishna is holding a long spear in his right hand and a sword is dangling by his side. Painting, Kishangarh school, Rajasthan, *c* 1770 A.D. (National Museum, New Delhi Collection)

Pl. VIII — A prince riding a scantily dressed galloping horse. A foot-archer and a mathlock-bearer escort him. The animal is saddled and bridled. Painting, Bundi school, Rajasthan, *c*. 1750 A.D. (National Museum, New Delhi Collection)

Pl. IX — Rao Budh Singh of Bundi riding a caparisoned horse. The horse is decked with a *kalaghī*, tassels, bridle, saddle and bands. Painting, Raghogarh school, Rajasthan, mid.18th century A.D. (National Museum, New Delhi Collection)

Pl. X — A nobleman riding a saddled and bridled horse. Painting, Raghogarh school, Rajasthan, mid. 18th century A.D. (National Museum, New Delhi Collection)

Pl. XI — A prince riding a horse decked with saddle, bridle, tassel and crest. Painting, Bundi school, Rajasthan, mid. 18th century A.D. (National Museum, New Delhi Collection)

Pl. XII — Cavaliers engaged in fighting with shields, swords and spears. All the warriors are wearing ribbed helmets while some of them are putting on chain armour fitted with *chār-āinā*. The war-animals are scantily decked. From the illustrated manuscript of the *Sikandarnāmā, c* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XIII — A war scene. The Sultān, seated in a *howdāh* on an elephant, is escorted by his armoured cavaliers. In the front, two horse-riders, fully armoured, are confronting each other. From the illustrated manuscript of the *Sikandarnāmā, c* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XIV — Two horseman in the midst of a battle; one holding a shield and a spear and the other a *gadā*. The warriors are fully armoured. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XV — The feat of sword and shield. Two horse-riders are witnessing the duel. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XVI — A battle scene,. Two horse-riders have jumped out of their horses and are engaged in hand to hand fight. The soldiers, mostly armoured, are holding clubs. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XVII — An armoured cavalier strikes with his sword which falls on the shield of another cavalier. The horses are bridled and saddled. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XVIII — Two fully armoured cavalier are confronting each other. A beheaded soldier is lying on the ground. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XIX — A battle scene; fully armoured knights, riding their horses, are fighting with spears, swords and shields. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National museum, New Delhi Collection)

Pl. XX — Horse riders engaged in a battle. The war - animals are saddled and bridled and the knights are armoured. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXI — An armoured horse-rider riding a bridled and saddled horse. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXII — A battle scene wherein cavaliers are fighting with bows and arrows, clubs, swords and shields. A caparisoned elephant is also present. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXIII Fully armoured cavaliers fighting with spears, swords, shields and bow. An elephant wearing tusk protector is in the background. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXIV A battle scene. A caparisoned elephant and armoured horsemen are engaged in fighting. War music is on. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXV Horsemen engaged in a battle; spears, clubs, shields and swords are employed. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXVI Sawai Pratap Singh of Jaipur riding a horse profusely ornamented; the bridle is studded with semi-precious stones. Painting, Jaipur school, Rajasthan, end of the 18th century A.D. (National Museum, New Delhi Collection)

Pl. XXVII A prince of Datia riding an ornamented horse; specially noticiable are the two bangle-like ornaments on the forelegs. Painting, Datia (M.P.), *c.* 1700 A.D. (National Museum, New Delhi Collection)

Pl. XXVIII Fully armoured Sultān holding a spear and a shield; the bridled and saddled horse is harnessed. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXIX Armoured knight wearing chain armour fitted with *chār-āinā* on a harnessed horse. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXX A horse archer, well protected, stretches his bow full. A quiver filled with arrows is dangling to his right. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXXI Armoured cavaliers in a battle, using bow and arrows, swords and clubs. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXXII A saddled horse. A small saddle placed on an ornamented cloth is tied with a breastband. Painting, Bikaner school, Rajasthan, early 18th century A.D. (National Museum, New Delhi Collection)

Pl. XXXIII An unusual saddle with stirrups. The horse is beautifully ornamented. Painting, Raghogarh school, Rajasthan *c.* 1780 A.D. (National Museum, New Delhi Collection)

Pl. XXXIV *Kalki Avatāra,* specially noteworthy is the saddle with its stirrups. The upper half of the horse is protected with body armour of fabric. Painting, Bundi or Uniara school, Rajasthan, *c* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXXV The saddled horse of Raja Harish Chandra. The saddle, placed on a *zarī* cloth, is tied with a breastband. Painting, Patiala school, Punjab, early 19th century A.D. (National Museum, New Delhi Collection)

Pl. XXXVI A saddled horse whose upper half is protected with fabric armour. The saddle and its stirrups are tastefully ornamented. Painting, Deccani *Rāgamālā,* mid. 19th century A.D. (National Museum, New Delhi Collection)

Pl. XXXVII Frontale for the forehead of the horse. Made of one piece of metal it bears a mid-rib and is padded from inside. Mughal, 17th century A.D. (National Museum, New Delhi Collection)

Pl. XXXVIII Frontale for the forehead of the horse, inside is padded. Mughal, 17th century A.D. (National Museum, New Delhi Collection)

Pl. XXXIX Complete frontale. It protected the forehead and both the cheeks of the horse. With the help of small chains this armour was placed on the head of the horse. Metal, Mughal, 17th century A.D. (National Museum, New Delhi Collection)

Pl. XL A stone medallion depicting an elephant with two riders, one of them holding an elephant-goad. A *jhool* is tied with a breastband. Bharhut, Shunga period, 2nd century B.C. (Archaeological Survey of India, New Delhi)

Pl. XLI Two riders on an elephant, one is holding an elephant-goad. A *jhool* is tied with a rope. Stone, Sātavāhana period, 18th century A.D. (National Museum, New Delhi Collection)

Pl. XLII A wall painting depicting the attack on Simhala (Sri Lanka). The elephants with their riders inside the *howdāh* are crossing a river on boats, Ajantā, Maharashtra, Vākāṭaka period, 5th century A.D. (Archaeological Survey of India, New Delhi)

Pl. XLIII Ornamented elephant and horse depicted in the wall painting, Ajantā, Maharashtra, Vākāṭaka period, 5th century A.D. (Archaeological Survey of India, New Delhi)

Pl. XLIV Elephant fight. From a stone panel in Achyutarāya temple at Hāmpi in Karnataka, 15th century A.D. (Archaeological Survey of India, New Delhi)

Pl. XLV *Shamshīr,* Damascus steel blade, inscribed.

Pl. XLVI An elephant fighting with a lion. the elephant is decked with *jhool,* ornamental bells and tusk protector. Painting, Mughal school, *c.* 1620 A.D. (National Museum, New Delhi Collection)

Pl. XLVII An elephant went amuck; he broke his chains, overthrew his *mahāut* and is on the way to create havoc. Noteworthy is a special trident-like weapon employed by one foot-soldier to control the wild animal. Painting,Kota, Rajasthan, mid. 18th century A.D. (National Museum, New Delhi Collection)

Pl. XLVIII An elephant went amuck, broke his chains and crushed his *mahāut*. Several spears, tridents and javelins are hurled to control the wild animal. Painting, Kota school, Rajasthan, mid. 18th century A.D. (National Museum, New Delhi Collection)

Pl. XLIX A hunting scene, an elephant attacked by a tiger. Elephant is covered with a *jhool*. Painting, Rajasthan, 18th century A.D. (National Museum, New Delhi Collection)

Pl. L An elephant decked with a *jhool*, ornamented with bells, tusk protector and forehead protector. Painting (National Museum, New Delhi Collection)

Pl. LI Shāh Jahān riding an elephant. The elephant is ornamented with tusk protector, *jhool*, necklaces and other ornamental devices. Anklets are seen on all his four feet. the emperor, without a *howdāh*, is himself guiding the animal with an elephant-goad. Painting, Mughal; *c.* 1650 A.D. (National Museum, New Delhi Collection)

Pl. LII War musicians on elephant, camel and horses. A kettledrum is placed inside the *howdāh*. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. LIII A prince riding a caparisoned elephant who is tastefully decked. The *howdāh* is ornamented. Several soldiers surround the prince. Painting, Rajasthan, 18th century A.D. (National Museum, New Delhi Collection)

Pl. LIV A hunting scene. A prince, seated on a small *howdāh* is shooting at a tiger with his matchlock gun. The *mahāut* holds an elephant-goad while another rider carries a bow and a quiver filled with arrows. Painting, Kota, *c.* 1730 A.D. (National Museum, New Delhi Collection)

Pl. LV A prince riding an elephant inside a *howdāh*. The animal is ornamented with tusk protector, *jhool*, bells, necklaces and other ornamental devices. Several quivers filled with arrows are fastened with the *howdāh*. Painting, Rajasthan, 18th century A.D. (National Museum, New Delhi Collection)

Pl. LVI An elephant carries on its back a *jhool* and an ornamented empty *howdāh*, A *mahāut* holds an elephant-goad. Fully armoured cavaliers surround the elephant. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. LVII The Sultān on an unusual *howdāh* in the shape of a royal chair. The *jhool* is beautifully embroidered. The cavaliers, fully armoured, escort the Sultān. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. LVIII The Sultān inside a rectangular, small *howdāh* divided into two sections-the back portion is occupied by a flywhisk-bearer. The fabric *jhool* is embroidered with *zarī*. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. LIX Elephant armour mounted on a dummy. It is made of lamellar and covers the entire body including forehead and trunk. 18th century A.D. (Tower of London Armouries, London)

Pls. LX to LXV Different species of war elephants. From the illustrated manuscript of the *Peelnama, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pls. LXVI to LXXI Different species of elephants. From the illustrated manuscript of *Peelnama, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. LXXII Personal steel bow of Bahādur Shāh Jafar. It is made of two pieces and it carries, on its obverse side, verses composed by the Emperor himself, Mughal, 1857 A.D. (National Museum, New Delhi Collection)

Pl. LXXIII Close-up of Pl. LXXII showing floral design in damascened work.

Pl. LXXIV *Korā* slightly curved with sharp edge on convex side. An eye is carved on the blade. Bengal, 18th century A.D.

Pl. LXXV Curved dagger, jade curved hilt shaped like a flower, Sheath is embroidered with *zarī* work. Rajasthan, 17th century A.D. (National Museum, New Delhi Collection)

Pl. LXXVI Dagger with ivory handle, mid. 17th century A.D. (Jagdish and Kamla Mittal Museum of Indian Art, Hyderabad)

Pl. LXXVII Horse-shaped handle of a dagger, made of dark green jade and engraved with floral design, part of the blade is visible, Mughal, Delhi, *c.* 1670 A.D.

Pl. LXXVIII A *jamadhar* of watered steel blade. The ivory sheath is fitted with golden plates all over. It carries three smaller knives. Delhi, Mughal, *c.* 1650 A.D. (National Museum, New Delhi Collection)

Pl. LXXIX Cavalry spear. Small leaf-shaped blade has a sheath; wooden shaft has a central grip. North India, 17th century A.D.

Pl. LXXX *Barachhā* in two pieces. It is made completely of steel. Long leaf-shaped blade is ornamented. North India, 17th century A.D.

Pl. LXXXI Spear-head, triangular blade has the figure of Ambā riding a lion. The shank is damascened in gold. Rajput, Rajasthan, 17th century A.D.

Pl. LXXXII Elephant-goad, leaf-shaped central blade, the curved blade is shaped like a crocodile. South India, late 17th century A.D.

Pl. LXXXIII Elephant-goad completely of metal; the handle is chiselled all over. North India, late 17th century A.D.

Pl. LXXXIV *Gurj*, six-petalled metallic flower forms the head surmounted with a pointed spike. Plain rod of metal, Maharashtra, 17th century A.D.(National Museum, New Delhi Collection)

Pl. LXXXV Upper part of the battle-axe engraved with floral and creeper design. Metallic hilt. Rajasthan, 18th century A.D.

Pl. LXXXVI Battleaxe; crescent-shaped blade engraved all over with floral, creeper and elephant design. Handle of wood. North India, 18th century A.D.

Pl. LXXXVII Personal battleaxe of Nādir Shāh bearing his name and title in gold. Metallic handle is damascened in gold in floral design. 1739 A.D. (National Museum, New Delhi Collection)

Pl. LXXXVIII *Bhuj*, blade damascened in gold in floral design; metallic handle is similarly ornamented. Bhuj, Gujarat, late 17th century A.D. (National Museum, New Delhi Collection)

Pl. LXXXIX Indo-Turkish egg-shaped helmet (viewed from the back) inscribed all over. The fixed spike curved at the tip bears the names of Allah, Muhammad, Ali, Fatima, Hasan and Hussain in Naskh script and Arabic language. Delhi Sultanate period, 15th century A.D. (National Museum, New Delhi Collection)

Pl. XC Close-up of Pl. LXXXIX

Pl. XCI *Khud*, dome-shaped helmet, borders damascened in gold floral design; camail of interlinked mail variety. North India, 17th century A.D.

Pl. XCII *Khud*, hemispherical bowl with two plume-holders in between a nose-guard with set-screw. The upper terminal of the nasal ends in a pine-shaped ornament of perforated steel. Long camail of interlinked iron links. North India, mid. 17th century A.D. (National Museum, New Delhi Collection)

Pl. XCIII One of the *chār-āinā* plates of Damascus steel on the borders of which the verses from the *Nārāyaṇa Kavacha* (*Skandha* VI, chapter 8 of the *Bhāgawat*) are inscribed in the Sanskrit language and Devanāgarī script. Rajput, Rajasthan, 18th century A.D. (National Museum, New Delhi Collection)

Pl. XCIV Armour to protect the back. Pointed spikes are fitted. Rajput, *c.* 1720 A.D. (National Museum, New Delhi Collection)

Pl. XCV Waist-coat armour of Aurangzéb, made of Damascus steel in two halves. It bears the name of Aurangzéb. Inside lining is of stuffed cotton. Mughal, 1700 A.D. (National Museum, New Delhi Collection)

Pl. XCVI Details of Pl. XCV showing the name of Aurangzéb.

Pl. XCVII Knee-cap of metal shaped like a miniature helmet. The bayonet-shaped spike is screwed at the top. The surface is engraved with floral design and human figures. Mughal, early 17th century A.D. (National Museum, New Delhi Collection)

Pl. XCVIII. Foot-armour of interlinked chain mail, the outer and inner borders as well as the linings are of silk stuffed with cotton wool. Mughal early 18th century A.D. (National Museum, New Delhi Collection)

Pl. IC — Back-scratcher shaped like the palm. Completely of metal, it is damascened all over in gold. Hyderabad, 17th century A.D.

Pl. C — Shoulder-guard (part of the complete brigandine suit) made of quilted fabric studded all over with gilt nails in floral pattern. Rājput, 18th century A.D. (Wallace Collection, London)

Pls. CI & CII — A pair of *bājūband*, the arm plate and the broad plate attached to the wrist are damascened in floral design in gold. The gauntlet is of interlinked chain mail, Rājput, Rajasthan, 18th century A.D. (National Museum, New Delhi Collection)

Pl. CIII — *Bājūband* made of two pieces of steel hinged together; corrogated and engraved with floral design. Rājput, Rajasthan, 18th century A.D. (National Museum, New Delhi Collection)

Pl. CIV — Details of CIII depicting Ambā on a tiger.

Pl. CV — Circular, less convex shield of Damascus steel with borders damascened in gold with floral and creeper design. Four bosses of Damascus steel are similarly damascened. Mughal, Lahore, early 18th century A.D. (National Museum, New Delhi Collection)

Pl. CVI — A circular shield of Damascus steel. The borders are damascened in floral and creeper design in gold. Four steel bosses are also damascened. Mughal, early 18th century A.D. (National Museum, New Delhi Collection)

Pl. CVII — A circular metallic shield engraved all over with hunting (*shikārgāh*) and palace scenes. Four steel knobs have pierced borders. The central figure, the anthropomorphic, Rajasthan, *c.* 1670 A.D. (National Museum, New Delhi Collection)

Pl. CVIII — Inside view of a shield, the velvet lining is embroidered. A square cushion is padded to which were attached two leather loops, which themselves were screwed to four rings which served as the washers for the knobs on the outside. Mughal, 17th century A.D.

Pl. CIX — A metallic circular shield of Damascus steel with its borders engraved with floral and creeper design; four bosses have perforated borders. North India, 17th century A.D.(National Museum, New Delhi Collection)

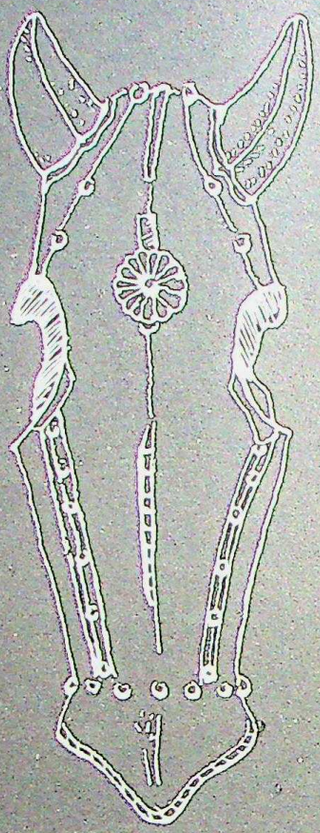
Pl. CX — Details of Pl. CIX showing the central part with four knobs.

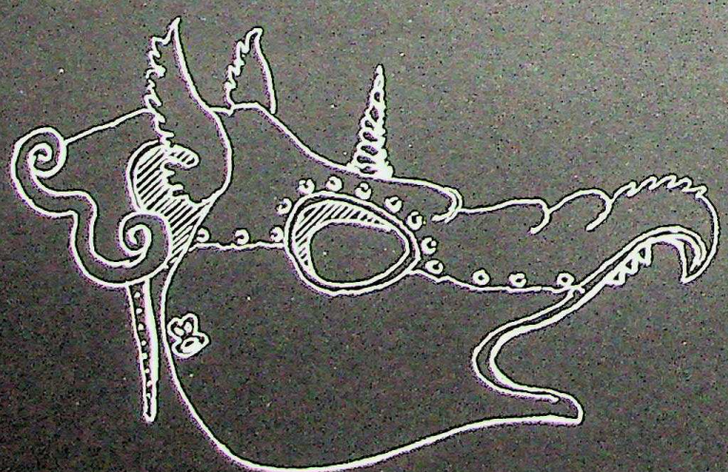
Pl. CXI — A miniature cannon mounted on a two-wheeled wooden cart. *c.* 1780 A.D.

Pl. CXII — Single-barrelled, muzzle-loading matchlock gun. Rectangular wooden butt is inlaid with ivory flowers, *c.* 1700 A.D.

Pl. CXIII — Single-barrelled, muzzle-loading, matchlock gun. Rectangular wooden butt is inlaid with ivory. Muzzle-loading rod is attached, *c.* 1650 A.D.

Pl. CXIV	Single-barrelled, muzzle-loading matchlock gun. Rectangular wooden butt is inlaid with ivory, *c* 1700 A.D.
Pl. CXV	Single-barrelled, muzzle-loading matchlock gun; wooden stock is inlaid with ivory. North India, *c*. 1700 A.D.
Pl. CXVI	Single-barrelled, muzzle-loading flintlock gun. Plain wooden furniture. *c*. 1700 A.D.
Pl. CXVII	Single-barrelled, muzzle-lading flintlock pistol; barrel is made of gun metal; wooden furniture. *c*. 1710 A.D.
Pl. CXVIII	Single-barrelled, muzzle-loading pistol. The flintlock mechanism was later converted into percussion cap. 19th century A.D.
Pl. CXIX	Percussion-cap, muzzle-loading, single-barrelled gun. Wooden butt is curved like a crescent. Sindh, *c*. 1850 A.D.
Pl. CXX	Details of Pl. CXIX. Percussion-cap mechanism is clearly visible.
Pl. CXXI	Details of the barrel of Pl. CXIX
Pl. CXXII	*Jamadhar*, triangular blade of watered steel. Two percussion-cap pistols fitted on the handle, Delhi, 19th century A.D. (National Museum, New Delhi Collection)
Pl. CXXIII	Ivory gunpowder flask terminating into the head of an elephant. Ornamented all over with dot and leaf design. Mughal, late 17th century A.D. (National Museum, New Delhi Collection)





1
Introduction

The animals used in the war were adequately caparisoned to shield them from the attack of the enemy's forces.[1] The most popular war-animal has always been the horse. Mules were, however, often employed and seem to be admired on account of their great speed. Camels were used specially in the desert warfare. The elephants were present throughout. The bullocks, when employed to pull heavy cannons, were also sometimes armoured and harnessed.

The term 'horse or elephant furniture' includes harness, trappings and armour. The 'harness', as a rule, includes both the protective armour and the decorative trappings. The word 'armour' denotes only the defensive covering intended to protect the horse or elephant. In common use these words are seldom distinguished and all these terms, individually and collectively, are employed for the articles used with the horses and elephants in war or hunting or sports or simple riding. The use of these words has become so common that each term means a 'caparisoned' or 'well equipped' or 'protected' or 'armoured' horse or elephant.

The knight was generally fully armoured from head to foot. The extreme weight of these armour, mostly of mail with its thick padded garments, made the use of horse a necessity for then the weight was all borne upon the shoulders and was not, as was the case with the suits of plate, distributed over the limbs and body of the wearer.

Interestingly in India the horse and elephant armour had, more or less, the same evolution as the human armour had. The earliest animal armour were made of fabric and leather, then of mail and finally of plate or plate-and-mail combined.

ARMOUR OF FABRIC AND LEATHER:

Fabric armour was the oldest and the simplest. It has been found in all ages down to the present day. Sometimes it was considered to be the only defence for the animals, specially the ones belonging to not-so-rich soldiers, that is why even in the Mughal, Maratha and Sikh army, some of the horses were scantily covered having a saddle, a blanket and a frontale. The rich and those who could afford it, used for their horses and elephants the fabric in combination with other forms of armour, in that case it was used beneath the mail to absorb shock or beneath the plate armour to reduce chafing (Pl. XXII).

The fabric armour was mainly of the following type:

1. Several thickness of cloth were quilted together.

Fig. 1 *Jazerant i.e.*, armour made of strips of metal fastened to leather. It is similar to brigandine; the distinction being that in *jazerant* the scales are outside the cloth and in brigandine inside. Rajput, 18th century A.D. (after G.C.Stone)

Fig.2 A cavalier using an onion-shaped helmet with camail, a full-sleeved shirt, arm-guards and trousers. A sleeveless armour of scale is worn over the shirt. Drawn from the illustrated manuscript of the *Tārīkh-i-Khāndān-i-Timūriā* (Khuda Bux Library, Patna)

2. Pads of cotton or wool or jute were covered with cotton velvet or silk cloth.[2]

3. Rods or slates of wood or bone were lashed together with cord or sinew. It was largely used in Sikkim.

The metal armour has always been costly. Obtaining and working on metal too posed problems. Finally, it was heavy and sometimes irksome. These were some of the reasons that during the 17th and 18th centuries we notice in India tendency of lightening the elephant, horse and human armour. Embroidered saddle cloth, shabraques and complete trappings were made of fabric or leather. The elephant was covered with huge carpet-type covering. It may be noted that a quilted fabric of either linen or cloth quite often provided a very serviceable protection and being cheap, light and easily accessible, it has been used for the animals throughout in India. The most important factor is the Indian heat which makes the wearing of metal armour, both for men and animals, for a longer period almost impossible.

Another favourite material for the defensive purpose and for trappings was leather or hide. The bridles, the saddles and the stirrups were invariably made of leather. Even with the chain mail or plate armour the leather fabric was added in one form or the other to reinforce the metal which is a less rigid material. Thus the combination of fabric and leather with mail or plate has produced some excellent specimens of horse and elephant armour during the 17th century A.D.

Leather was used either in its natural form or was sometimes boiled and beaten till it could be moulded and then allowed to dry hard.

SCALE OR IMBRICATE ARMOUR:

Scale armour has a great antiquity.[3] It is the first and the oldest method of arranging plates of metal on a fabric. The scales were sewn upon a leather or fabric garment. In it the upper row overlapped the lower in such a way that the attachment was covered and protected from injury. The most common variety of scale armour (fig. 6) consisted of rectangular plates whose lower edge was either rounded or pointed. Each plate contained holes in their upper edges for stitching or lacing them to the foundation of fabric or leather and then there were two additional holes at each side for securing them in horizontal rows. These were linked with wire or string, thread or sinew. Three systems are noticed:

1. Generally the rows of scales were overlapped in an imbricated pattern hence these are termed as "imbricated armour" also. These mostly look like the scales of a fish or the tiles on a roof (fig.2).

2. Some Indian scales were merely sewn in rows to the foundation.

3. Riveting was occasionally employed.

The metal was always considered the best and the most formidable but since its cost was prohibitive, the scales came in handy. In the early stages it was difficult for the armourer to produce large metallic armour so they made smaller plates which were fastened together (fig.4).

This kind of armour was time-consuming and difficult to construct and at the same time very

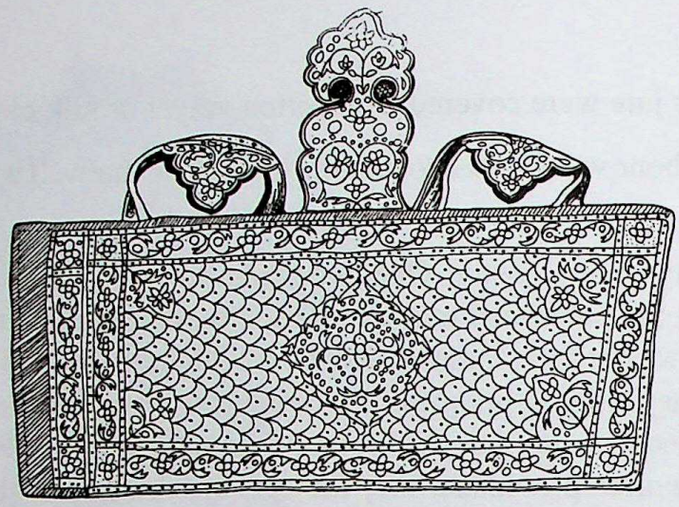


Fig. 3 *Peṭī* composed of stout hide covered with crimson and green velvet and studded with a pattern in gilt-headed nails, consisting of a scaled ground with floral ornament. The shoulder strips are similarly decorated. Indore, Madhya Pradesh, 18th century A.D. (Victoria and Albert Museum, London)

Fig. 4 A horsed-archer wearing a helmet with camail and half-sleeved lamellar armour over a full-sleeved shirt. The legs are protected by small trousers over which are worn the long boots. The warrior is armed with a bow, a quiver containing arrows, a bow-case (*qirbān*) and a curved sword. Drawn from the Mughal miniature paintings, 17th century A.D.

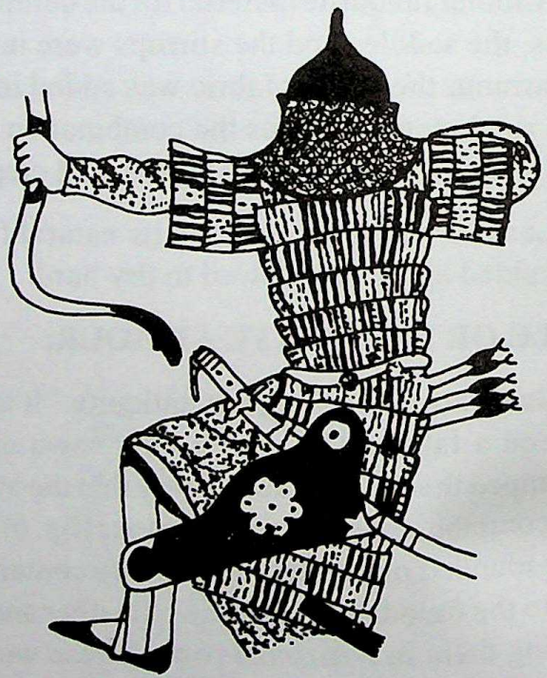


Fig. 5 'Coat of thousand nails' or *chiltā hazār māshā* made entirely of quilted fabric and studded all over with gilt nails. It consists of a hood-like cap with large rounded ear-and-neck -flaps, a long, straight and full coat with scalloped flaps over the shoulders and upper arms and high matching riding boots. The padding is of cotton wool faced with velvet and lined with silk, the entire surface bears diamond-shaped design. The nails are bent over the back. Indore, Madhya Pradesh, 18th century A.D. (Tower of London Armouries, London)

heavy since in order to provide full protection to the fighting animal the plates overlapped and naturally increased the total weight of the armour.

SHAPE OF SCALE :

The following shapes of scale have been found in India:

1. Rectangular with the lower edges rounded or pointed (fig. 7)
2. Leaf-shaped
3. Square

MATERIAL FOR SCALE:

Scales for armour have been made from the following materials:

1. Iron or steel
2. Wood or bamboo
3. Raw hide or leather
4. Gold or silver
5. Copper or bronze or tin

Scale armour was quite serviceable and with certain modifications it formed the distinguishing feature of some of the Rajput horse armour of the 17th century A.D.

DEFECTS OF SCALE ARMOUR:

As stated earlier, the production of scale was a laborious job and it was also very heavy. But the main reason of the decline in the use of scale armour was the lack of its flexibility. All scale armour were rigid because the scales cannot turn back on each other. Since they were sewn in close-set for providing complete protection, the scales did not permit such movement. When the mail armour for the men and animals was introduced it ousted scale armour almost completely.

LAMELLAR ARMOUR:

The miniature paintings of the Mughal school generally depict warriors wearing lamellar armour. The lamellar armour is composed of laminated plates or strips of metal riveted upon leather or fabric to give more ease of movement than would be possible with a solid metal. The metallic plates or splints or strips are also called 'lamallae' hence such armour in which the strips dominate are called lamellar armour (fig. 7).

The laminated or splint armour was introduced in India by the Mughals in the 16th century A.D. These are not mounted upon leather but different strips were connected together.

The Mughal miniature paintings show a great many armoured horses and elephants, some of these armour seem to have been constructed of lamellar of iron while others are of leather lamellar (fig. 9).

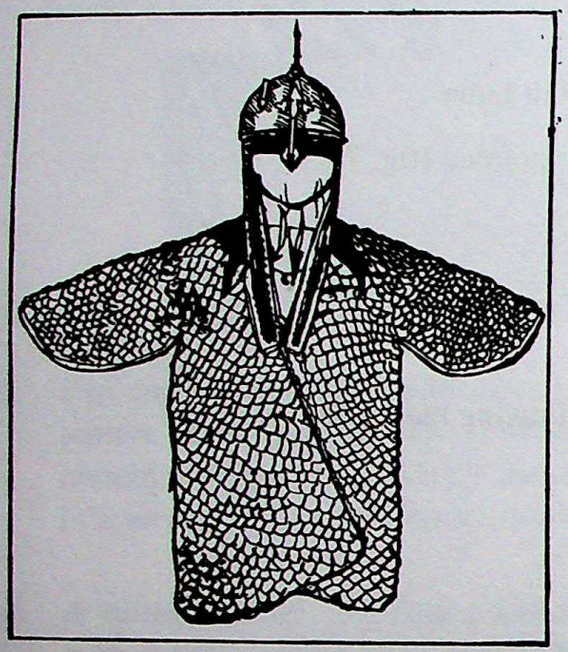


Fig. 6 A rare example of a coat made of pangolin scales and decorated with gold leaf; the coat spreads from the shoulders to a wide skirt and has broad flaps to cover the upper arms. It opens at the front and is fastened with buttons. The edges are bound with velvet; the bowl-shaped helmet is of steel. Datia, Madhya Pradesh, 19th century A.D. (Tower of London Armouries, London)

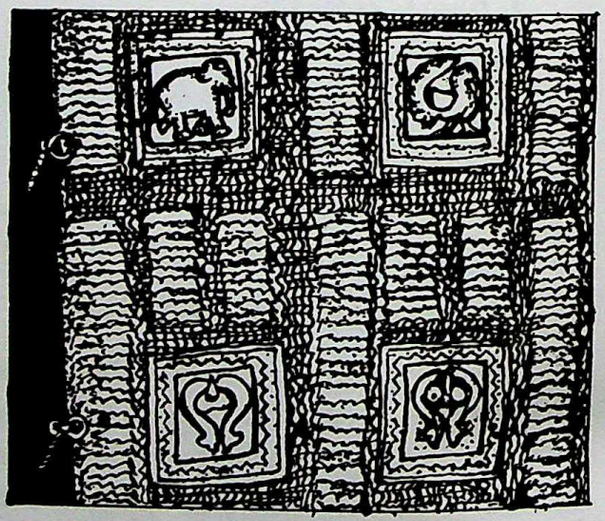


Fig. 7 *Jhool*, covering for the body of the elephant. It is made of small rectangular plates of steel attached with mail rings and fitted with big square plates. The big plates are decorated. Copied from a *jhool* preserved in the Banaras Vidya Mandir Museum, Ramnagar, Varanasi.

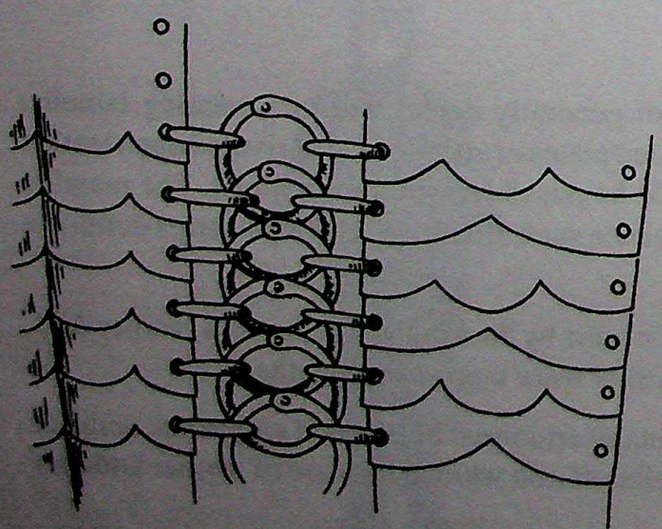


Fig. 8 Details of mail and plate construction. The two ends of the mail are flattened and riveted. Each ring is interlinked with four other rings. The plates are drilled (after H.R. Robinson)

MAIL ARMOUR:

Mail armour has been the most favoured protection in all parts of the world[4] and was more widely used, for men and animals alike, than any other type of armour.

When was the mail introduced in India we know not but it was certainly known to the ancient Indian Aryans. For the production of mail it is essential that the armourer should know the art of wire drawing. Since it was a very complicated, highly technical and laborious job, the mail armour has always proved to be the costliest but at the same time greatly in demand. Only the rich and the important knights could afford to have it for their horses and elephants.

KINDS OF RINGS:

The mail or the tiny rings were of the following two types:

1. *Riveted* - The ring was riveted in such a way that each ring could interlink with four other rings. This was the best and most of the surviving mail horse and elephant armour are made of riveted mail. However, when the rings were extremely fine it was difficult to rivet.

2. *Butted* - In this the two ends of the ring were brought almost touching each other.

It may be noted that the wire used for the mail was of rounded section.

MAKING OF MAIL:

First of all the wire which formed the links was hammered out from a solid bar or ingot. Then the roughly hammered strips were probably twisted spirally round on iron or wood core and then cut off into rings of equal size. The ends of the ring were flattened and pierced and when interlaced, the pierced ends were riveted together or sometimes welded with heat[5] (fig. 9).

The rings (or links) that are simply brought together or butted together (also called 'jumped') but are not joined constructed armour of inferior quality because this was quite risky and in the heat of battle it was feared that some of the rings could have gaped wide and thus the purpose of armour would have been defeated (fig.10).

PLATE ARMOUR:

Mail's perishable nature has prevented much of the early horse and elephant armour from surviving and today it is difficult to see whether plate armour preceeded or succeeded the mail armour. Plate armour for some limbs of the animals used in war was in use in the 16th century Mughal India and in the 17th century it reached its greatest perfection (fig. 11).

The frontale of the horse (fig. 13) and the elephant was generally of plate. The solid metal armour was forged from the solid ingot and was not rolled in sheet. It was, therefore, possible for the armourer to regulate the thickness *i.e.*, increasing the thickness of the metal at the most vital part and decreasing the same in the parts less exposed.

COMBINED ARMOUR:

The finest specimens of horse and elephant armour in India were produced by the

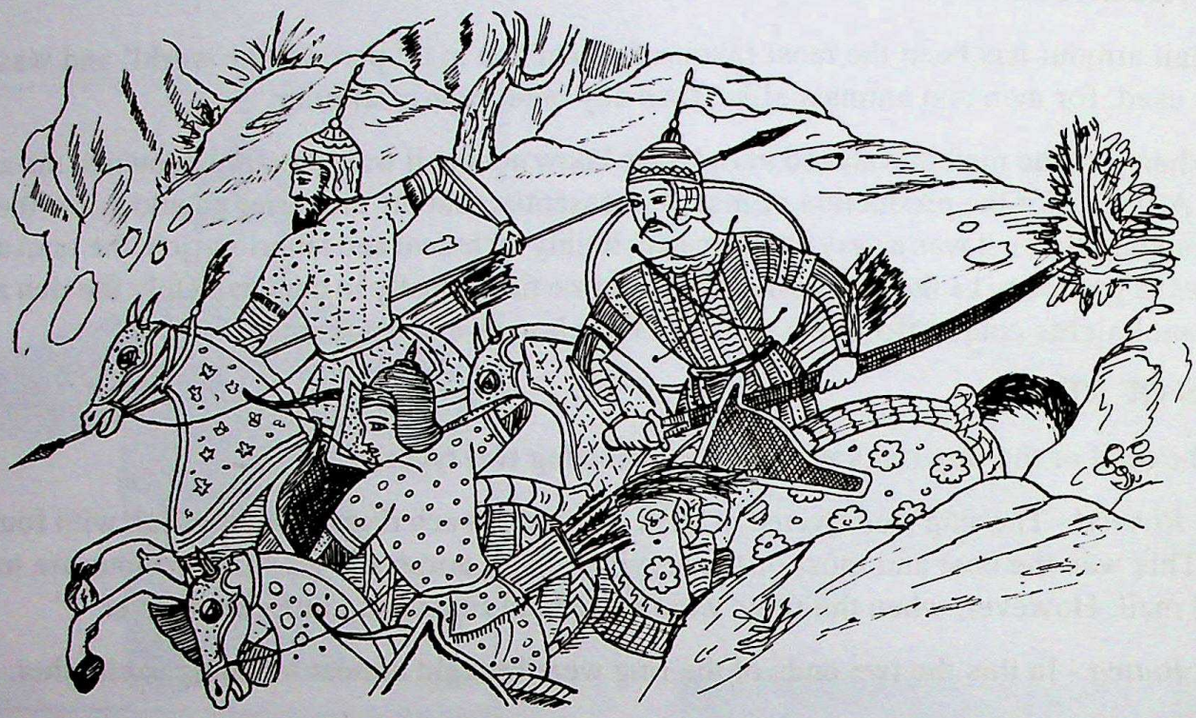


Fig. 9 Warriors, engaged in a battle, are protected with helmets, body armour, hand armour and so on. The horses are similarly covered with chanfron, neck protector, body armour and the like. The horse armour are tastefully ornamented. Drawn from the illustrated copy of the *Bābur-Nāmā*, 1598 A.D. (National Museum, New Delhi)

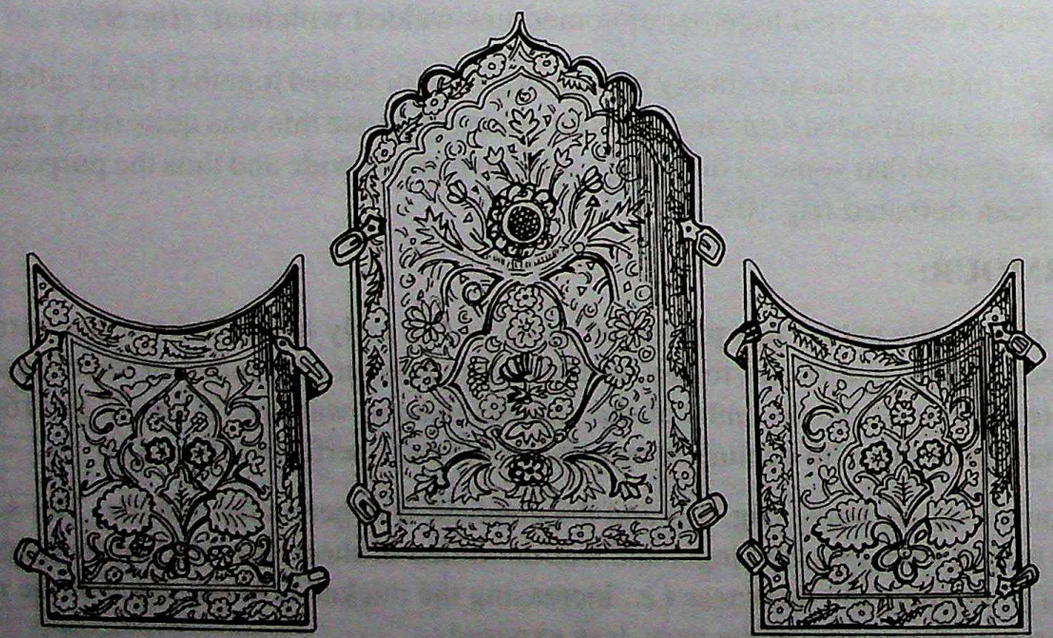


Fig. 10 Three pieces of *chār-āinā* set: the two side plates and a fornt one. The back plate is not shown here. All the plates are damascened all over in gold in floral and creeper motif. Drawn from the actual specimen, Mughal, 17th century A.D. (National Museum, New Delhi)

combination of two or more types of armour. Sometimes plates of solid metal were directly connected to the mail for which tiny holes were drilled all around the plate. Sometimes the plates were merely hung over the mail by straps.

Then there were lamellars combined with mail. The strips riveted with mail provided more flexibility than was possible with a solid plate. It also reduced the weight as compared to an armour exclusively of mail. Since mail was slow to construct and also costly, the combination of lamellar speeded up the production of horse and elephant armour without much sacrificing the durability. Now the animal armour could be produced in bulk. It also reduced its weight. The mail usually gave a drab on the limbs of the animals which was also reduced.[6]

ORNAMENTATION:

The animal armour were primarily meant for the defence but some of them were tastefully ornamented (fig. 11). In India giving presents at the royal *durbār* (court) and at public receptions to distinguished persons in recognition of their services was an important function from ages past. Jewelled arms and caparisoned horses and elephants were frequently bestowed on the meritorious persons. On the 11th July, 1526, Babur had presented a *tipuchāq* horse with saddle mounted in gold, besides other items, to Humayun. Examples of beautiful embellished horse armour are available in the museums of India.

The animal armour were decorated with geometrical and floral patterns and hunting scenes. All possible materials were used in decoration. Precious and semi-precious stones; all the known metals; wood, cloth, horn, ivory, etc., were employed in the art of decoration but the material was always subsidiary to the general effect.

A number of techniques were employed:

1. DAMASCENING:

It is the art of encrusting gold or silver wires in the steel plate. First a pattern is drawn on the surface of the plate, then it is engraved as a channel with a pointed tool called *chermā*. The gold or silver is then drawn into very fine wire and wound on a bobbin. The artisan takes one end of the gold wire and fastens it to the channel by a few blows with his small hammer. He follows the pattern by bending his wire backward and forward until completed. The article is then exposed to a moderate heat and finally polished off (fig. 12)

2. GILDING:

It is gold or silver plating (*mulammā*) on iron. The gold is dissolved with a solution of mercury and so applied to the surface of the metal. Later it is heated and polished.

3. JEWELLING:

Some items of the trappings of horses and elephant were jewelled. The frontale, saddles and *howdāhs* were, though rarely, studded with precious jewels or semi-precious stones.

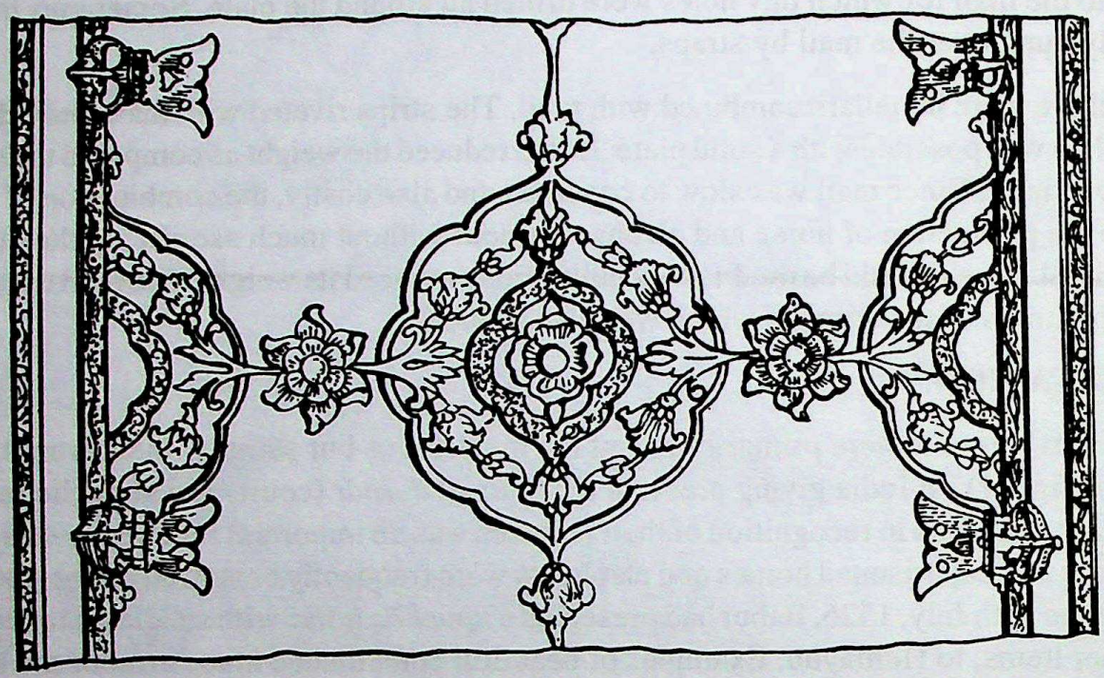


Fig. 11 Central part of a *chār-āinā* exquisitely damascened in gold in floral design : four buckles, two on each side, are visible. A very fine example indeed. Indo-Persian, 17th century A.D. (Windsor Castle, London)

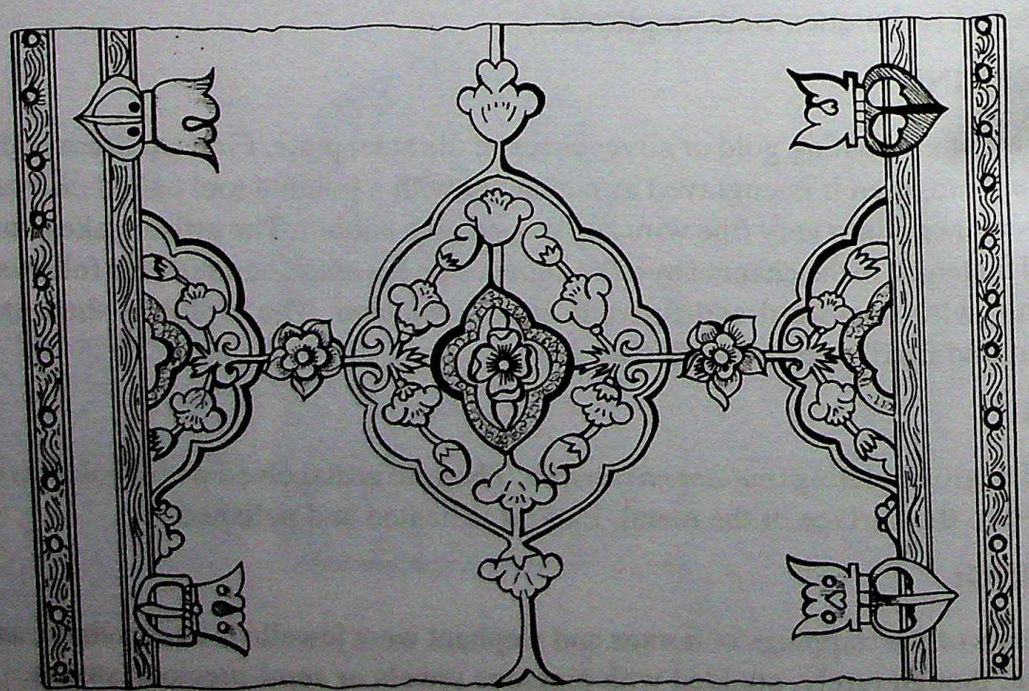


Fig. 12 Central part of a *chār-āinā* profusely damascened in gold in floral design : four buckles, two on each side, are seen. Indo-Persian, 17th century A.D. (Windsor Castle, London)

4. OTHERS:

Chiselling, engraving, etching, embossing, enamelling, *repoussé*, filigree are some of the techniques adopted for ornamenting one item or the other. Most of these were employed in the decoration of plate armour. Inscribed and enamelled piece, though rarely, have been found.

CONCLUSION:

Whatever may be the ornamentation the armour had to be convenient for the animal and the armourer had to bear in mind the movement of the limbs of horse or elephant while walking, running or fighting. The animal armour had to be constructed in such a manner that all those movements were allowed without hindrance and without compromising with the protection of the limb. Some of the surviving examples of the animal armour bear testimony to the fact that the armourer (*siklī-gara*) did his job exceedingly well.

References

1. The history of armour, whether for men or for animals, is a long and constant struggle between the offensive weapons and the defensive equipments and these were evolved primarily for the protection against them. The process, in fact, is continued even today when one nation discovers a deadly weapon and the other designs an armoured vehicle and *vice versa*.
2. Such fabric armour of two layers stuffed with wool fibres was used extensively in India.
3. Scale armour has been defined by G.C.Stone, *A Glossary of the Construction, Decoration and the Use of Arms and Armor*, reprinted (New York, 1961), p. 544, fig. 29.
4. The Romans used the mail in the 1st century B.C. and claimed to have originated its use. This has, however, been disproved by the archaeological finds in Scythian and Sarmatian graves datable to the 15th century B.C.
5. Charles Ffoulkes, *Armour and Weapons* (England, 1973), p. 20, fig. 1.
6. *Ibid.*, p. 52.

2
Cavalry through the Ages

INTRODUCTION:

The fully equipped knight, whether in the cumbrous garments of mail or in the most adaptable suit of plate, was very much dependent upon his horse in active warfare. It was, therefore, a necessity that the war-steed was properly armoured and harnessed.[1] It is very ofen alleged that the Indians never attained proficiency in horse warfare[2] which is not true. The Indians, at times and specilly during ancient period, relied much on the elephants but ever since the utility of horses in war was realised, this wing was never neglected.[3] The protection of horse was as necessary as that of the rider in the war hence protective coverng or armour-pieces were designed for literally every limb of the horse. Technically, there was not much difference in the human and animal armour, except, of course, in the shape and the design. A number of Indian horse armour preserved in the Tower of Armouries, London; Windsor Castle, London; Zarkoe Selo Collection, State Hermitage, Leningrad; Salar Jung Museum, Hyderabad, etc., bear testimony to the fact that the Indian war-horses, like their Muhammadan or European counterparts, were well armoured although its use was confined only to the horses of the kings, nobles and other important knights. The high cost of such armour, hot climate of the country (which makes the wearing of an armour for a longer time as unbearable), lack of good breed of horses and slow technological and metallurgical developments were a few of the handicaps still some fine specimens of horse harness can be seen in the museums of India (fig. 13).

HORSE IN PROTOHISTORIC TIMES:

Bones of the domesticated horse were unearthed at many places including at Mohenjodārō, a feet and ten inches deep beneath the surface.[4] Still earlier, the horse bones have occurred in the earliest pre-Harappan layer at Rānā Ghundāi,[5] and it is more than likely that the people of the Indus also bred horses.[6] Bones of domestic ass, too, were found at Harappā at varying depths. Three terracotta horse figures from Lothal[7] and a painting of a horse on a pottery from Rangpur[8] further support the argument. In the light of archaeology and also philology it has to be conceded that the tame horse was certainly known to the inhabitants of India even before the advent of the Rigvedic Aryans and their galloping beasts that brooked no opposition in their sweeping onslaught.[9] There is no evidence to prove the use of the horse in warfare in pre-Aryan India. There might have been some stray and sporadic experiments but the heyday of the war-horse dawned with the age of the *Rigveda*.

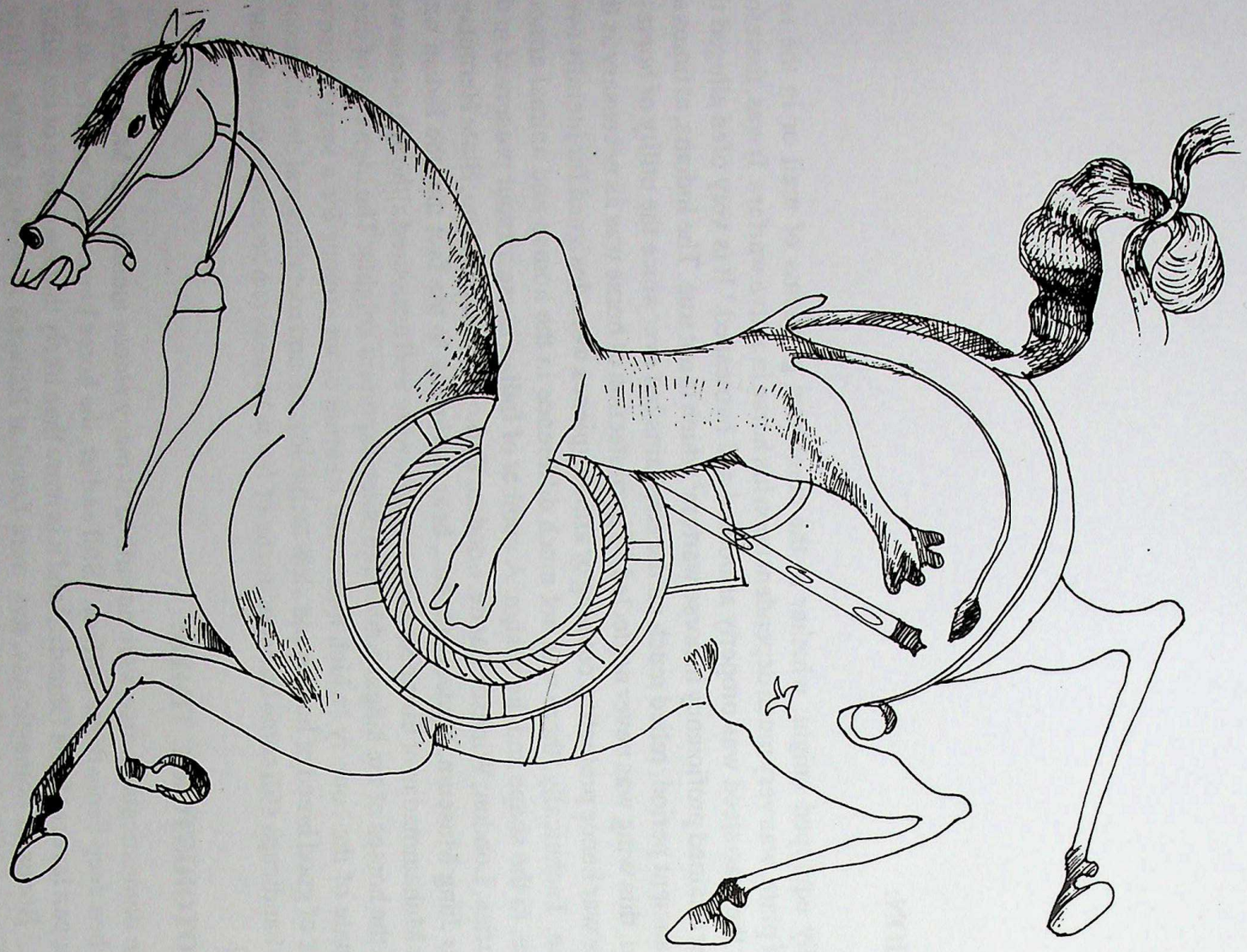


Fig. 13 A caparisoned war-horse decked with bridle, saddle, girth-band and the like. One of the front legs is fitted with a crescent-shaped horse-shoe. Drawn from the miniature painting of the Mughal school, 17th century A.D.

ORIGIN AND DEVELOPMENT OF ARMOURED HORSE:

It was earlier believed by almost all scholars that the horses were used in the war-chariots[10] and cavalry in the proper sense of the word was not recognised for a long time. According to them the horse began its glorious career as the adjunct and concomitant of the Rigvedic and later Vedic war-chariots.[11] The horse was assigned the role of a sentinel of the war-cars and flank-guard of elephantry. Describing the chariot-horse of the epic period, E.W.Hopkins says, "A horse stands on each side of the pole and the two are yoked, guided by a bit, *shipra* and reins while urged by a goad or a whip. The horses had gilded trappings (*hemabandha*)".[12]

Nevertheless cavalry is mentioned now and then in the whole range of Vedic literature. The *Rigveda* addresses Maruts:

"O heroes lordiest of all, who are ye that have simply come,
Forth from a region most remote?
Where are your horses, where the reins? How came ye?
How had ye the power?
Rein was on nose and seat on back.
The whip is laid upon the flank.
The heroes stretch thighs apart,
Like women when the babe is born."[13]

The evidence suggests that the Maruts, the warrior people, had largely ridden horses, though some of them did use the chariots.[14] The *Sāmaveda*[15] also describes the Maruts as "warrior horsemen". The *Atharvaveda* refers to the sharp and formidable front of the Maruts.[16] The *Taittirīya Saṁhitā*[17] mentions the seven troops of the Maruts which must have been the seven bodies of cavalry and chariotry.

In a *Rigvedic* hymn, which is also repeated in the later *Saṁhitās*,[18] the distinction between chariot and horsemen is clear and deliberate. It says:

"The war drum speaks aloud as battle's signal
Our heroes, mounted on their steed, come together
Let our car warriors, Indra, be triumphant".[19]

The *Vājasaneyī Samhitā* refers to the horse-rider (*ashvasādin*),[20] the horse-keeper (*ashvapa*)[21] and the stable master (*sūta*).[22]

The Chāndogya Upanishad[23] mentions *ashvanāyan* who was the leader of a body of cavalry. The word *chaturanga* occurs in the *Rigveda*[24] in the sense of 'four limbs of human body'; later it was used to denote a 'fourfold army'. The *Sāma Vidhāna Brāhmaṇa*[25] classifies the army into elephants, horses, chariots and infantry.

Despite the subordinate role of being yoked in the chariot or acting as their flank-guard, the cavalry had become an established branch of the army. The Rigvedic Aryans could not organise a well disciplined cavalry but there were a number of warriors fighting on horseback. S.D. Singh rightly surmises, "The Vedic cavalry must have only been a light irregular force excellent for

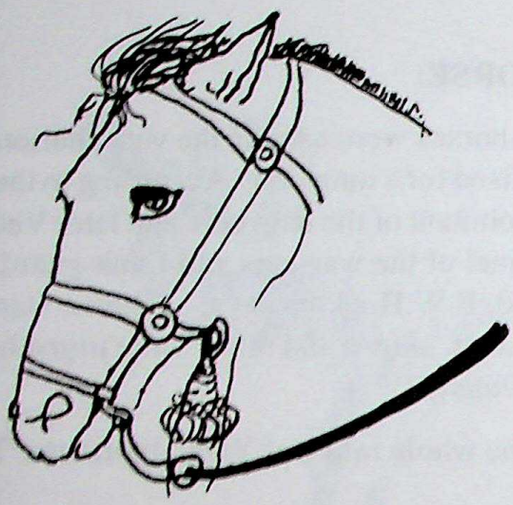


Fig. 14 A bridled horse without bit drawn from the north *toraṇa* of the *stūpa* at Sānchī, 2nd century B.C. Here in place of bit a spike (behind the jaw) has been used therefore the headstall has three bands; one passing over the nostrils, another beneath and third over the eyes. Where bits were used, the horses of Sānchī sculptures have only two bands in their headstall.

Fig. 15 A Mongol cavalier wearing an armour coat and carrying a sword and a quiver filled with arrows. He is resting his feet in the stirrups. Based on a terracotta model discovered from Central Asia by Sir Aurel Stein, 2nd century A.D. (National Museum, New Delhi Collection)

skirmishing, harassing and terrifying by their shouts and gallop, and mending up the booty of cattle and driving them home. Horses must have operated where chariots could not, in the rough and rugged hilly terrain, where fighting is indicated in the hymns of the *Rigveda* and the later Vedic literature".[26]

CAVALRY IN THE RĀMĀYAṆA AGE:

The demons in Lankā rode in chariots, on elephants and sturdy horses. The whole city was crowded with these vehicles and animals.[27] The armoured horsemen carrying spears in their hands, are frequently referred to.[28] The horses employed by Rāvaṇa were decked with golden harness.[29] The armoured horses are explicitly mentioned in the *Araṇya Kāṇda*[30] where the arrows of Rāma tore and pierced the horses of the enemy, though protected by golden armour, along with the chariots and charioteers, the elephants with their riders and the foot-soldiers. The cavaliers in that period carried spears (*shakti*), battle-axes (*parāshvadha*), mace (*gadā*) and hammers (*mudgara*).[31]

CAVALRY IN THE MAHĀBHĀRATA AGE:

In the *Mahābhārata* cavalry is mentioned as a separate arm force,[32] almost every *parva* of the *Mahābhārata* mentions the cavalry as an immemorial and inseparable arm of the fighting forces.[33] Fighting on horseback formed an obligatory part of princes' military training. Dhṛitarāshtra, Pāṇdu and Vidura were riders and tamers of horses.[34] Droṇa taught Arjuna the art of fighting on horseback.[35] The *Ādi Parva* narrates a tournament[36] organised by Droṇa to test the skill of his disciples. The princes rode their horses and hit the targets while in full career with shafts incised with their respective names.[37]

The *Virāṭa Parva* applauds the cavalry of the Kurus.[38] The *Udyoga Parva* refers to the well trained and obedient steeds accoutred in mail, decked with ornaments and furnished with flags.[39]

The *Bhīshma Parva* provides a vivid spectacle of the feats of cavalry.[40] Horsemen rush against each other and shoot their darts whistling through the air. Once the Kaurava warriors on their horses completely surrounded the army of the Pāṇdavas[41] then the King of Gāndhāra appeared on the battlefield with a force of ten thousand horses with their lances.[42]

The cavalry in the Epic age did not make any significant contribution to victroy or defeat. Fortunes fluctuated with the rise and fall of the charioteering heroes. The rider mounted on simple saddle-clothes and without stirrups, encumbered with a lance, javelin and sword. He wore his armour and his shield. A whip was tied to his wrist to manage the horse. It was really very difficult for the Epic cavalier to control his horse and seat in a real close fight.[43]

Fighting apart, knights on horseback attended the king and acted like aides-de-camp.[44] The *Bhīshma Parva* refers to the horsed messengers sent by the Pāṇdavas to make their troops desist from further fight.[45] The Epic, says S.D.Singh, in short, knows every use of the horse in war. The horses had names.[46] Krishṇa's double team of four Kambojian steeds is often mentioned, the two pole horses bearing the names 'Shaivya' and 'Sugrīva', and the two outsider called 'Māghapushpa' and 'Balahaka'.[47] The reins and the goads (of three pieces) were used. Besides the straps of the harness, the horses sometimes wore leather robes and a net, probably an armour. So also a wooden breast-plate seems to have been worn.[48] The horsemen were armed with spears, lances and short swords (*rsti*).[49]

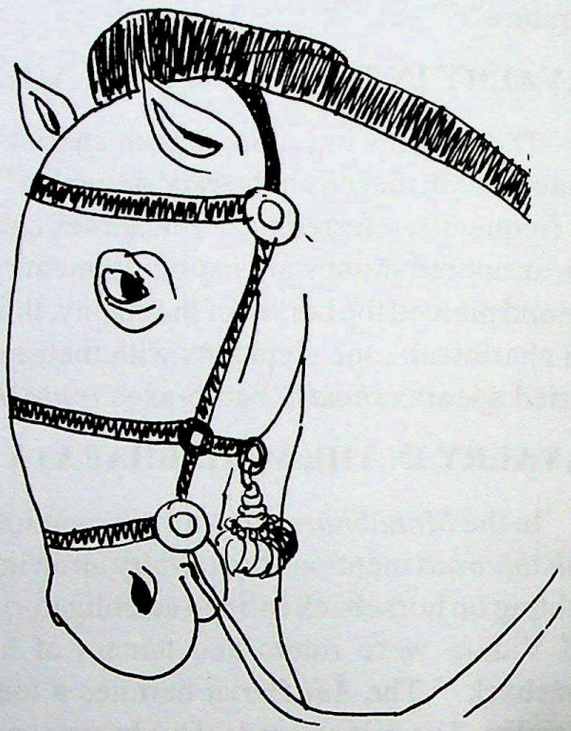


Fig. 16 A horse without a bit, instead it has a spike (behind the jaw). The headstall has three bands: one passing over the nostrils, another beneath and third above the eyes. Reins are attached to the lowermost band. Drawn from the cave paintings at Ajantā, 5th century A.D., Vākāṭaka period. ☞

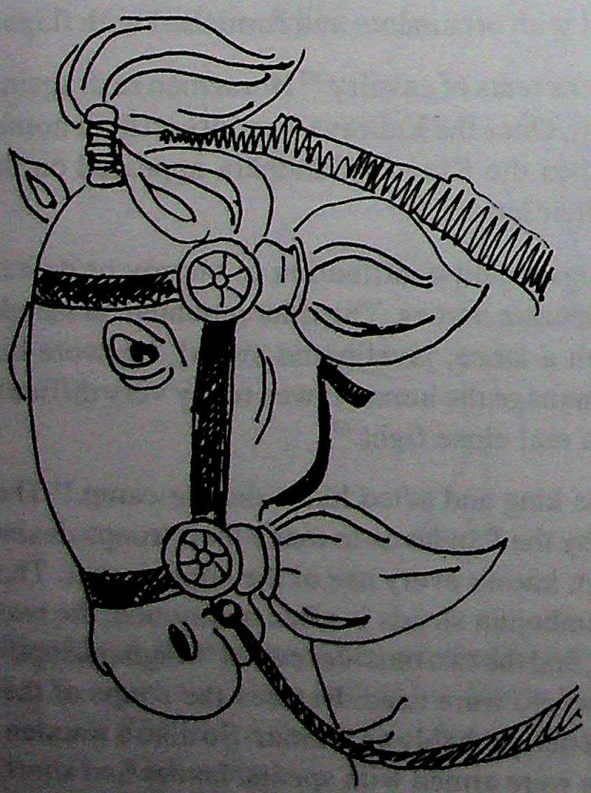


Fig. 17 A horse with a bit. There are only two bands in the headstall, one passing over the nostrils and the other above the eyes. Reins are attached to the lower band. Drawn from the wall paintings at Ajantā, 5th century A.D., ☜ Vākāṭaka period.

ARMOURED HORSE IN THE SIXTH CENTURY B.C.:

The *Nikāyas*[50] and the *Vinaya*[51] presuppose the existence of four divisions of the army, cavalry being one of them. It had now developed as an institution sanctified by time and usage. Gautam Buddha himself was an expert rider. Horse-dealers of Uttarāpatha are recorded to have come with 500 horses.[52] Horse-trainers are repeatedly mentioned.[53] The *Bhaddali Sūtta*,[54] refers to the training of horse in wearing the bit and harness, going straight along, running in a circle, galloping, neighing to command and other acrobatic feats[55] associated with speed and manners. A war between Ajātshatru and Prasenjit is described in *Saṁyutta Nikāya*.[56] Prasenjit, the ultimate victor, confiscates the elephants, horses, chariots and infantry of his adversary. The *Vinaya Piṭaka* prescribes "Let elephants be on this side, let horses be on this side, let chariots be on this side, let foot-soldiers be on this side".[57]

ARMOURED HORSE IN THE FOURTH CENTURY B.C.:

The Indian cavalry in the age of Alexander (326 B.C.) was no longer as inefficient and unskilful as in the Epic age. Aelian says that the Indians of this period held the horses in high esteem because of their great use in warfare (fig. 14).[58] In the battle of Hydaspes, says Arrian, "Alexander marched rapidly forward himself with the armoured 'Companion' cavalry against the left wing of the barbarians (Porus), making haste to attack their cavalry in a state of disorder while they were still in columns and before they could deploy into line. The Indians meanwhile had collected their well-equipped horsemen from every quarter and were riding forward to repulse Alexander's onset, when Keinos, in accordance with his orders, appeared with his cavalry upon the rear. Seeing this the Indians had to make their cavalry face both to front and rear, the largest and the best part to oppose Alexander, and the remainder to wheel round against Keinos and his squadrons. This, therefore, at once threw their ranks into confusion and disconcerted their plan of operations; and Alexander seeing that now was his opportunity while their cavalry was in the very act of forming to front and rear, fell upon those opposed to him with such vigour that the Indians, unable to withstand the charge of his cavalry, broke from their ranks and fled for shelter to the elephants as friendly wall".[59] The Indian horsemen carried two lances and a short buckler - shorter than that carried by the infantry.[60]

MAURYAN CAPARISONED HORSE:

Kauṭilya envisaged the importance of cavalry and realised its role alike in the beginning as well as in the thick end of the fight. "Disturbing the enemy's halt; gathering the troops; curving, circling, miscellaneous operations; removal of the rear; protection of the broken army",[61] are some of the jobs assigned to horses. The overall head of the horses was *ashvādhyaksha*[62] (State Superintendent of Horses).

In the Buddhist literature, war-horses clad with iron armour (*varman*) and mail (*sannāha*) are mentioned.[63] The Scythian and Parthian 'Satraps', who invaded and conquered North-western India in the first century B.C., were expert horse-riders. The testimony of numismatics indicates that they were mainly responsible for using cavalry on a massive scale in India. King Azes I, Azilises and Azes II, and the Satrap Zeionises are depicted on their coins as horsemen equipped with bows and arrows.[64] This was the age of mounted archery. It was here that the real stirrups (fig.15) were used and the proper bits were introduced (Pl. I).

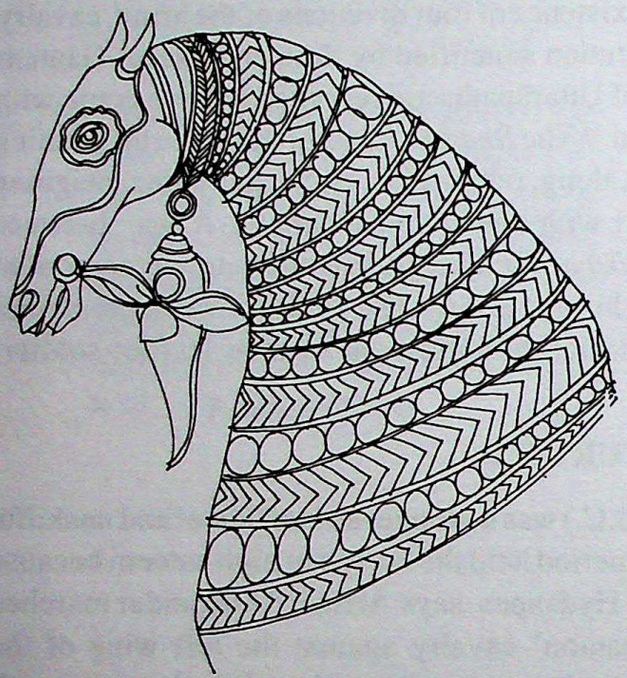


Fig. 18 Crinet or *gardanī* for covering the neck of the horse. The base is of quilted cotton over which are stitched a series of alternate plates. The chanfron (*qashqā*) is plain while ornamented tassels hung from the neck. Drawn from a miniature painting, 17th century A.D.

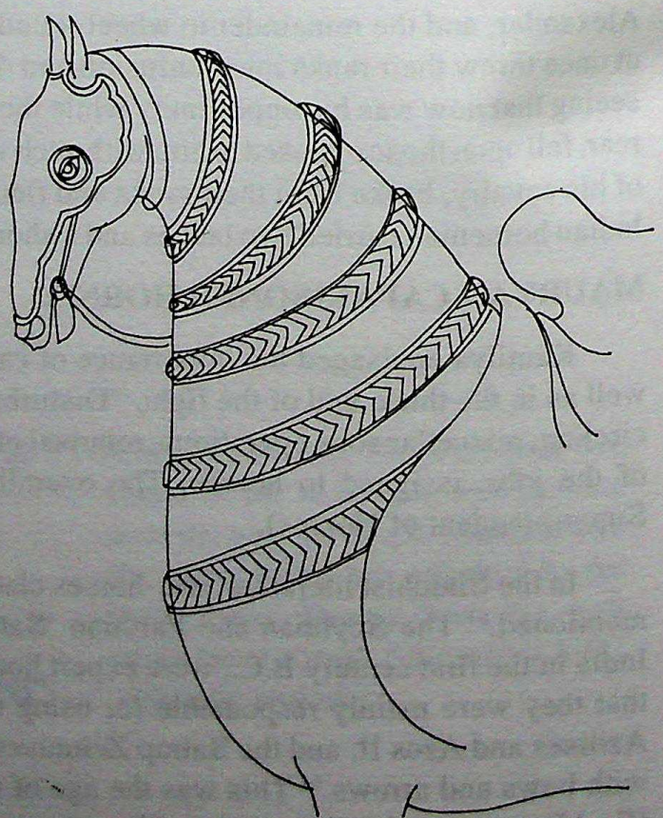


Fig. 19 Crinet or *gardanī* for covering the neck of the horse. It is made of thick velvet covered with series of alternate metalled plates stitched over it. The chanfron (*qashqā*), the bit and bridle are plain. Drawn from a miniature painting of Rājpūt school, early 18th century A.D.

ARMOURED HORSE IN THE GUPTA PERIOD:

Our knowledge of Hindu cavalry during the Gupta and post-Gupta period is very meagre. However, on certain types of their coins the Gupta monarchs are depicted as full dressed cavaliers. Representations of mailed horsemen may be seen on some Gupta coins and the 'Bull and Horseman' type of the King of Ohind.[65] The horse painted at Ajantā are caparisoned (figs. 16, 17).

ARMOURED HORSE IN THE POST-GUPTA PERIOD:

Bāṇa tells us that the royal stable of emperor Harsha was filled with horses from Vanayu, Araṭṭa, Kamboja, Bhāradvāja, Sindhu and Persia.

The *Mulaipaṭṭu*, a Tamil Idyll, mentions "shields of protection for horses".[66] The *Rājataraṅgiṇī* refers to "armour-clad horses".[67] The *Mānasollāsa* speaks of horses "well-protected by means of body armour."[68]

Writing in the 10th century A.D. Somadeva says, "The cavalry represents the mobility of the army. With a king, having a strong cavalry force, war becomes almost a sport. On him fortune smiles, and even enemies at a distance easily come within his grasp".[69] In the same tone Someshvara (12th century A.D.), the Chālukya ruler and the author of *Mānasollāsa*, observes, "The cavalry need entertain no apprehension regarding the territory."[70]

A science of horse (*Ashwa-shāstra*) grew up. Horses came to be classified according to their breed, physical appearance, age, strength and proportions. Cavalry was mainly divided into two types: heavy and light. The heavy cavalry was deployed in the centre of the line to deliver charges, to break through obstacles, to penetrate the enemy lines from the front, etc. The light cavalry was positioned on the wings to give cover to flanks, to ensure security of the army in entrenched positions, to expedite communications with its different parts, to obstruct enemy supplies and reinforcements, to cover retreats of infantry and artillery, and to encircle and pursue the enemy. In short, the horse provided mobility to the army.[71]

ARMOURED HORSE DURING DELHI SULTANATE:

Famous were the horses of the valleys and pastures of the upper Oxus in Guzgān, Gharchistān, Tukharistān, Khuṭṭal and Chaghaniān. These were highly prized by the Ummayyad Caliphs and were exported to India and even to China during the Mongol and Turkish periods. At the time of Ghaznavids, the Khuṭṭalis were highly skilled in the manufacture of saddlery pieces including bridles and strap.[72] Apart from Turkestān, Persia and Arabia,[73] some famous horse breeding areas lay in the Sulaimān mountains, west of the Indus, where lived "Ashvaka" ('the horse-people') tribe. The conquests of Muslims in West Asia, Persia, Sind and Afghanistan dried up this source[74] and the Indian states had to depend on the comparatively inferior horses[75] from Gujarat or Saurashtra. The Turkoman horse, excelling even the proverbial Arabian horse, was considered the noblest in the Central Asia and surpassed all other breeds in speed and endurance, intelligence and faithfulness and had a marvellous sense of loyality".[76] Amīr Khusrau says that the Turkish horsemen were so swift that "the crow of victory did not build its nest except on their bows".

Mahmūd of Ghaznī and Muhammad Ghurī won their most brilliant military triumphs in India

Fig. 20 Crinet (*gardanī* or criniers) for covering the neck. The horse in the middle is without a chanfron (*qashqā*) while the remaining two have their frontales. The crinets are made of several metallic plates. Drawn from a miniature painting of Mughal school, mid 17th century A.D.

by the skillful use of a numerous and well armoured cavalry.[77] The army of Muizzuddīn Ghurī, which according to Ishāmī, consisted of one hundred and thirty thousand horsemen, had all soldiers and all horses fully equipped with steel armour. Mobility was the keynote of Turkish military organization at that time. It was the age of the horse and a well-equipped cavalry with tremendous mobility was the great need of the hour.[78] Indian military strategy gave greater importance to weight than to mobility.[79] The Rājputs believed in crushing rather than moving rapidly and striking. Huge and unwiedy phalanxes of armies headed by elephants with gorgeous trappings were bound to be signally beaten when face to face with a swift and easy moving armoured cavalry which could attack the flanks and the rear of the enemy forces (fig. 19).

Regular horse-shows[80] were arranged. In April, 1260 A.D., Ulugh Khān, the general of Sultān Nāsirduddīn Mahmūd, defeated the Mongols and captured from them 50,000 war-horses in addition to other booty.[81]

In order to defend his empire from the frequent Mongol invasions, Sultān Balban (1266-1287 A.D.) had posted eighteen thousand armoured horses under the command of his son and heir-apparaent Prince Muhammad. In 1270 A.D., when Tamar, the Mongol, attacked Multān with thirty thousand well-equipped horses, Prince Muhammad opposed him and in that cavalry battle the Prince was killed.

During Balban's period a war-horse could be purchased for 30 to 40 *tankās* owing to the peaceful conditions created by him.[82] Tughril, once the Governor of Balban, rebelled. In 1279 A.D., Balban personnaly marched to Lakhnautī (Bengal). Tughril was terrified. He rode on an unsaddled horse but before he could go far he was struck with a short battle-axe and he dropped down dead. All the soldiers of Tughril were impaled on the gibbets erected on both sides of market for more than two miles.[83]

Alāuddīn Khaljī (1296-1316 A.D.) made Malik Kāfūr incharge of thirty thousand horsemen and commissioned him to conquer Devagiri.[84] On his way in 1310 A.D., Malik Kāfūr attacked Wārangal. Pratāp Rudra Deva, the ruler of Wārangal, submitted and offered him, besides many other items, 20,000 war-horses, both *kohī* (mountain horse of indigenous or country breed) and *bahrī* (sea horse or imported) of Yemen or Egypt.[85]

Alāuddīn organized four markets in Delhi for various commodities:

(a) Central Grain Market or *Mandī*,

(b) *Serā-i-adl* or exclusive market for cloth, sugar, herbs (*nabat*), dry fruits (*mewā*), butter and lamp oil (*rughan-i-chirāgh*),

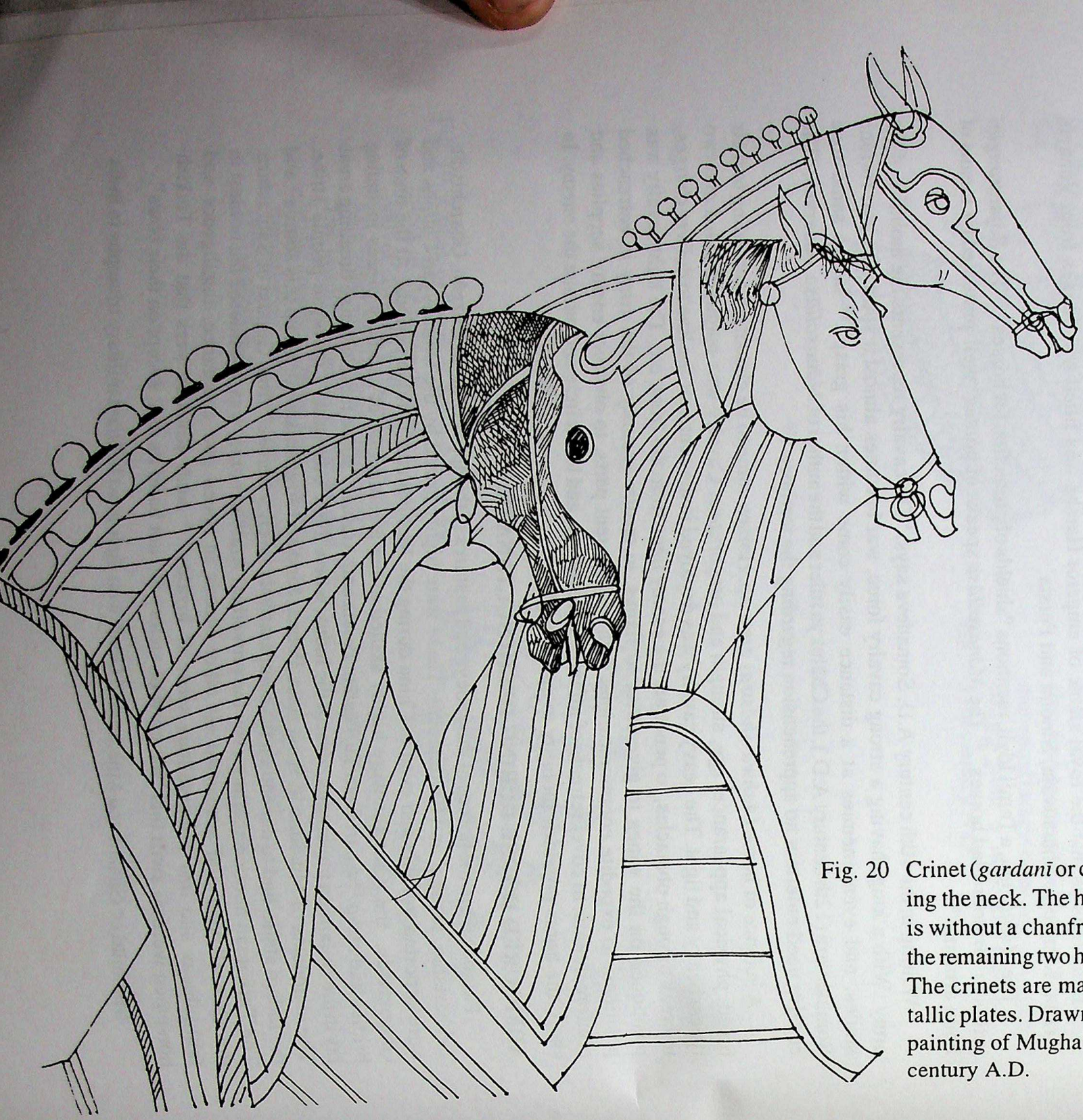
(c) Animal market for horses, slaves and cattle, and

(d) The General Market for all other commodities.

Four general regulations (*zabīla*) were applied to all these four markets:

(a) fixation of prices according to quantity

(b) elimination of merchants and capitalists,



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21 Bābur's army crossing the river on boats. In one of the boats is being carried a horse havir g its saddle and stirrups. From the illustrated manuscript of the *Bābur-nāmā*, Mughal, 15'/8 A.D. (National Museum, New Delhi)

(c) severe supervision of brokers, and

(d) personal investigation by the king.[86]

The horses acceptable to the army were divided into three grades with the help of experienced horse-brokers (*dallāls*) - first grade, 100 to 120 *taṅkās*; second grade, 80 to 70 *taṅkās*; third grade 60 to 70 *taṅkās*. The price of small Indian pony (*taṭṭoo*), which was not accepted by the army, varied from 10 to 25 *taṅkās*.[87]

The leading horse-brokers along with their horses were brought before the Sultān after 40 days. He made stern and detailed inquiries. Secret spies were appointed. In a year or two the price of horses was stabilized.

After prices had been reduced, Baranī tells us, a well-equipped horseman (*murattab*) could be enlisted for 234 *taṅkās* annually and a soldier with two horses for 78 *taṅkās* more. Ferishtā informs that during Alāuddīn Khaljī seventy-five thousand fully armoured horses were recorded in the register.[88] A well-equipped horseman (*murattab*) was paid 234 *taṅkās* a year.

Firūz Tughluq's (1351-1388 A.D.) imperial army consisted of 90,000 war-horses[89] together with elephant corps and foot-soldiers. The horses were kept in the royal stables in charge of an officer called *Amīr-i-Ākhur* or *Ākhur Bāk*.[90] Besides Indians, there were Arab and Turki horses which were imported from outside and were much superior in quality.[91]

In Alāuddīn's time the maximum price of a war-horse was 120 *taṅkās* but in Firūz Tughluq's time the price had gone up to 500 *taṅkās*.

Ziyāuddīn Baranī says that Sultān Muhammad Tughluq enlisted 3,70,000 horsemen for the conquest of Khurāsān, but they were disbanded after a year in 1331 A.D., because the treasury was unable to pay their salaries any longer.[92]

Mahmūd Begarhā, the reputed ruler of Gujarat, was succeeded by his eldest son Muzaffar Shāh II on the 24th Nov., 1511 A.D. On the 23rd Nov. 1512 A.D., Muzaffar Shāh presented to Persian ambassador some wonderful horse armour and other precious commodities.[93] Among the presents which the Persian envoy placed before Sultān Muzaffar Shāh II were a turquoise cup of great value, a chest full of jewels and thrity Irāqī horses.[94]

In 1436 A.D., Alāuddīn II, the then Bahmanī ruler, invaded Déva Rāya II, the ruler of Vijayanagar. Despite his resources in men and material Déva Rāya II was defeated. In consultation with his ministers, Déva Rāy II came to the conclusion that the superiority of the Bahmanī ruler was due to better horses and archers. Accordingly, Déva Rāya recruited Musalmāns in his service, allotted them *jāgīrs* and handsome salaries. Soon he had two thousand Musalmāns and sixty thousand Hindus well-skilled in archery, besides eighty thousand horse and two hundred thousand foot.[95]

ARMOURED HORSE DURING EARLY MUGHAL PERIOD:

During Bābur's time (1526-1530 A.D.) *jibā-khānās* were established which contained *joshan* (mail for the soldiers) and *kuhāh* (horse mail with accoutrements) (fig. 21).[96] In 1501 A.D.Bābur

21 Bābur's army crossing the river on boats. In one of the boats is being carried a horse havir g its saddle and stirrups. From the illustrated manuscript of the *Bābur-nāmā*, Mughal, 15'/8 A.D. (National Museum, New Delhi)

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(d) personal investigation by the king.[86]

The horses acceptable to the army were divided into three grades with the help of experienced horse-brokers (*dallāls*) - first grade, 100 to 120 *taṅkās*; second grade, 80 to 70 *taṅkās*; third grade 60 to 70 *taṅkās*. The price of small Indian pony (*taṭṭoo*), which was not accepted by the army, varied from 10 to 25 *taṅkās*.[87]

The leading horse-brokers along with their horses were brought before the Sultān after 40 days. He made stern and detailed inquiries. Secret spies were appointed. In a year or two the price of horses was stabilized.

After prices had been reduced, Baranī tells us, a well-equipped horseman (*murattab*) could be enlisted for 234 *taṅkās* annually and a soldier with two horses for 78 *taṅkās* more. Ferishtā informs that during Alāuddīn Khaljī seventy-five thousand fully armoured horses were recorded in the register.[88] A well-equipped horseman (*murattab*) was paid 234 *taṅkās* a year.

Firūz Tughluq's (1351-1388 A.D.) imperial army consisted of 90,000 war-horses[89] together with elephant corps and foot-soldiers. The horses were kept in the royal stables in charge of an officer called *Amīr-i-Ākhur* or *Ākhur Bāk*.[90] Besides Indians, there were Arab and Turki horses which were imported from outside and were much superior in quality.[91]

In Alāuddīn's time the maximum price of a war-horse was 120 *taṅkās* but in Firūz Tughluq's time the price had gone up to 500 *taṅkās*.

Ziyāuddīn Baranī says that Sultān Muhammad Tughluq enlisted 3,70,000 horsemen for the conquest of Khurāsān, but they were disbanded after a year in 1331 A.D., because the treasury was unable to pay their salaries any longer.[92]

Mahmūd Begarhā, the reputed ruler of Gujarat, was succeeded by his eldest son Muzaffar Shāh II on the 24th Nov., 1511 A.D. On the 23rd Nov. 1512 A.D., Muzaffar Shāh presented to Persian ambassador some wonderful horse armour and other precious commodities.[93] Among the presents which the Persian envoy placed before Sultān Muzaffar Shāh II were a turquoise cup of great value, a chest full of jewels and thrity Irāqī horses.[94]

In 1436 A.D., Alāuddīn II, the then Bahmanī ruler, invaded Déva Rāya II, the ruler of Vijayanagar. Despite his resources in men and material Déva Rāya II was defeated. In consultation with his ministers, Déva Rāy II came to the conclusion that the superiority of the Bahmanī ruler was due to better horses and archers. Accordingly, Déva Rāya recruited Musalmāns in his service, allotted them *jāgīrs* and handsome salaries. Soon he had two thousand Musalmāns and sixty thousand Hindus well-skilled in archery, besides eighty thousand horse and two hundred thousand foot.[95]

ARMOURED HORSE DURING EARLY MUGHAL PERIOD:

During Bābur's time (1526-1530 A.D.) *jibā-khānās* were established which contained *joshan* (mail for the soldiers) and *kuhāh* (horse mail with accoutrements) (fig. 21).[96] In 1501 A.D.Bābur

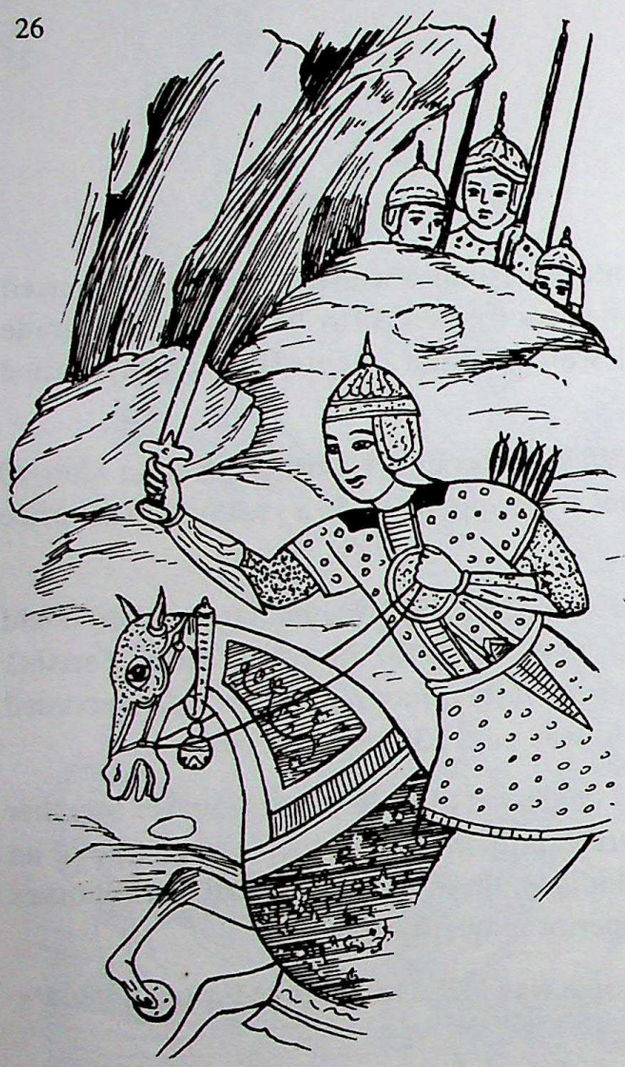

Fig. 22 Cavalier clad with helmet, armoured coat, *bāzūbands* and armed with sword, dagger and arrows. The horse is protected with a chanfron (*qashqā*). Akbar's period, Mughal, *c.* 1610 A.D.

Fig. 23 Armoured cavalier, specially noticeable is the muzzle of the horse. The warrior is wearing a helmet and an armour coat. Drawn from a miniature painting of 17th century A.D.

marched out of Samarkand in order to fight Shaibaq Khān. On the way was the Kohik river. Bābur says, "It was the season (July) when this river comes down in flood. We rode right into it, man and horse in mail. It was just fordable for half-way over; after that it had to be swum. For more than an arrow's flight[97] we, man and mount in mail, made our horses swim and so got across. Once out of the water, we cut-off the horses' armour and let it lie (fig. 22)."[98]

In 1506 A.D. Bābur attacked on the Turkmān Hazārās, a tribe in Kābul, in winter. He says, "Deep indeed was the snow that winter. Off the road it was up to a horse's *qaptāl*[99] so deep that the night-watch was in the saddle through till shoot of dawn".[100]

At the decisive battle of Pānīpat (1526 A.D.) Bābur formed his line of battle in six brigades, besides his bodyguard in the centre, where he posted himself. Before each of the brigade he placed a squadron of light horse, and in front of the whole his artillery and rocket wagons, in three divisions. The artillery commenced the action and in spite of being surrounded by Ibrāhīm Lodī's cavalry and elephantry, caused great slaughter among them. Bābur had ordered his right and left wing cavaliers[101] to fall back by which his army was thrown into a circle, and after standing the repeated assaults of the enemy, he collected two brigades of choosen war-horses, and let them to a grand charge, before which the enemy gave way, and thus dawned the Mughal rule in India (fig. 23).

As an exile Humāyun reached Seistān (then a province of Persia) of which Karā Sultān Sham was the governor who greeted Humāyūn and as a respect made an offering of the celebrated horse called "Leilet al Kudder" (the night of power).[102]

At all stages Shér Shāh's main arm was the cavalry. He had 1,50,000 horses in readiness. In his cavalry the mounted archers played a significant role. Each archer wore light armour and armed himself with a bow and sword. Their horses were armoured.[103]

ARMOURED HORSE IN THE ĀIN-I-AKBARĪ:

Bārbosā has praised the skill, martial qualities and horses of Delhi cavalry as also of Gujarat and Deccan. The latter were, in all probability, imported. In fact the Mughal army was essentially an army of horsemen. They were accustomed to fight on horseback only. Abul Fazl says that the cavalry was of great importance in the three branches of the Government and for expeditions of conquest and a means of avoiding much inconvenience. The cavalry consisted mainly of *mansabdārs*, their *tābīns* (or followers), while the *ahadīs* were a special class of horsemen recruited individually and moving round the Emperor's person, owing allegiance to none else, under a separate command.

Abul Fazl says that Akbar was very fond of horses[104] and they were imported from Iraq, Turkey, Turkestān, Badakshān, Shirwān, Qirghiz, Tibet and other countries.[105] The *khāsa* (special) horses were kept in six stables, each containing forty choicest horses mostly from Arabia[106] and Persia. For the whole outfit of a *khāsa* horse the allowance was 277 1/2 *dām* per annum.[107] It was thus divided: an *artak* (or horse quilt of wadded chintz) 4 *dām*; a *yālpash* (or covering for the mane) 32 *dāms*; a woollen towel 2 *dāms*—these three articles were renewed every six months. There were a saddle-cloth (the outside of which was woven of hair, the lining being of felt) 42 *dāms*; halters for the *mukhṭa* (head-stall) and the hind feet 40 *dāms*; a *pusht-tang* (girth) 8 *dāms*; a *mangas-rān*

Fig. 24 An armoured cavalier. The warrior is wearing a ribbed helmet, an armoured coat of half sleeves, a pair of *dastānā* and long boots. The bridled horse is covered with an embroidered *kājem* (a quilted covering). It was not an armour but a part of the harness of the horse. Drawn from a Rājpūt miniature painting, early 18th century A.D.

(flywhisk) 3 *dāms*; a *mukhṭā* and *cayza* (the bit) 14 *dāms*; curry-comb 1 1/2 *dāms* and a grain bag 6 *dāms*. These were given annually. The *nāls* (horse-shoes) were renewed twice a year.

ARMOURED HORSE DURING JAHĀNGIR PERIOD:

Jahāngīr was very fond of giving and accepting presents and the items included in such gifts were jewels, arms and armour, elephants and horses. In the fifth regnal year (1610 A.D.) Jahāngīr presented to Rājā Kalyāṇa with an Irāqī horse and similalry, the other *amīrs* were given robes of honour and horses.[108] In the seventh regnal year (1612 A.D.) he presented the Khān Khānā with a grand dress of honour, a jewelled dagger, a special elephant with *talāyir* (accoutrements) and a caparisoned Iraqi horse.[109] The same year Jahāngīr appointed Mirzā Rustam as the Governor of Patna and bestowed upon him a superb dress of honour, an ornamented sword, special elephant and a horse with a jewelled saddle.[110] In the eleventh regnal year (1616 A.D.) Muqarrab Khān was made the Governor of Ahmadabad, his *mansab* was raised and he was honoured with *nādirī* (a dress of honour), a *taghmā* (badge or medal), a special elephant, a sword studded with precious stones and two caparisoned horses from the private stable of the Emperor.[111] In the same year Dilāwar Khān came from Pāttan which was his father's fief and presented a 'Kāchhī' horse to Jahāngīr. The Emperor says, "till I came to Gujarat no one had presented me with so fine a horse. Its value was 1000 rupees".[112] When Jahāngīr reached Gujarat the same year he was surprised to see that Jām Sāhéb, the ruler of Jām Nagar, named 'Jassā' ('Jām' was his title), had maintained a strong cavalry of 600 'Kāchhī' horses.[113] In the 16th regnal year (1621 A.D.), Jahāngīr gave 1000 war-horses to Khurram (later Shāh Jahān) as present and specially conferred upon him, for his personal use, a very special war-horse named 'Rūm-ratan' ('the jewel of Turkey') which the ruler of Persia had sent Jahāngīr as a present out of the spoils of the Turkish camp.[114]

During this period the mounted archers (fig. 25) were being replaced by the matchlockmen. In the 17th regnal year 2500 well-horsed cavalary was enrolled of whom 400 were matchlockmen.[115]

ARMOURED HORSE DURING AURANGZÉB AND AFTER:

On Thursday, the 13th May, 1669 A.D., Radandāz Khān was appointed to root out the rebels near Agra. He was presented, among other things, with a horse with gold trappings.[116]

In 1617 A.D., Mohammad Sharīf, envoy of Bukhārā, got a present of 2500 rupees and horse with gold trappings.[117] and on Sunday, the 15th September, 1672 A.D., the Emperor presented to Muhammad Sāhib at the time of his marriage with Āsāish Bānū Bégam, daughter of Murād Baksh, a horse with gold trappings and a jewelled dagger.[118] Similar presents were given by Aurangzéb to Sujait Khān who was sent to punish the Afghans on Monday, the 17th November, 1673;[119] to Vikram Singh of Gwalior on Monday, the 24th May, 1675;[120] to Yalangtosh Khān Bahādur at the time of his marriage[121] on Sunday, the 8th October, 1676;[122] to Prince Muhammad Akbar who was made the Governor of Lahore on Sunday, the 13th April, 1679 (he was given two horses with gold *sāz*);[123] ete. On Tuesday, the 14th June, 1681 A.D., the Rāṇā of Méwār visited Aurangzéb and presented to the Emperor eighteen horses with gold and silver *sāz*[124] and several other items. On Friday, the 17th August, 1683 A.D., the Emperor received the news that Ibrāhīm Khān, the Subédār of Kashmir, had defeated the Dalāī Lāmā and annexed Tibet in the Mughal empire. The Emperor was overjoyed. He ordered the music of joy to be played and despatched a number of items to the

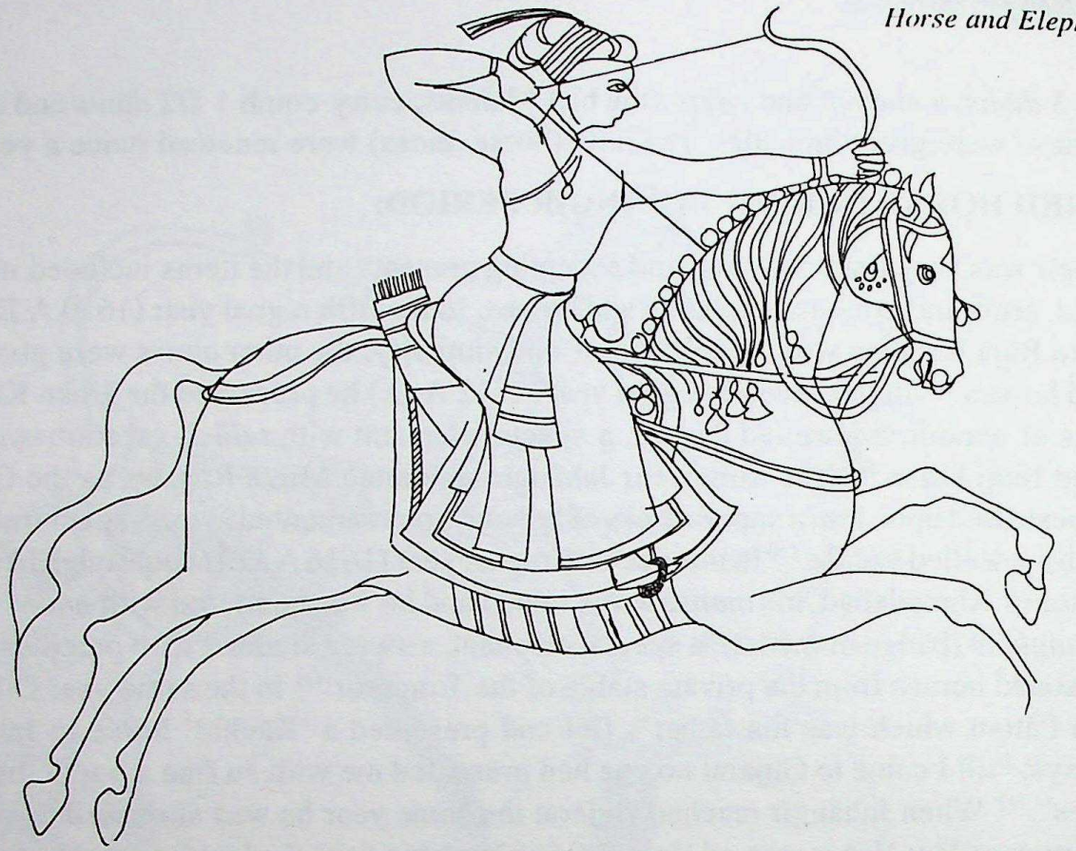

Fig. 25 Cavalier, equipped with bow, arrows and quiver, is riding a galloping horse. The animal is covered with a *kājem* - a quilted covering. Specially noticeable are the bands under the chest with which two sides of the *kājem* are tied. Drawn from a miniature painting of Rājpūt school, early 18th century A.D.

Fig. 26 The horse covered with *kājem* (a quilted covering) embroidered tastefully and put on the back of the animal without a saddle and a bridle. Long ornamented tassels are falling from the neck. Drawn from a miniature painting of the 17th century A.D.

Khān as *inām* (presents) the same day. This included one Arab horse worth 200 gold *muhars* with gold *ṣāz*.[125] The horses with enamelled trappings were presented by the Emperor to Prince Muazzam on the 5th April, 1695[126] and another enamelled *sāz* was given to Prince Āzam on the 19th Oct., 1699 A.D.[127] The estimated number[128] of war-horses in the Mughal army is as follows: Akbar[129] = 3,84,758; Shāh Jahān = 2 lakhs; Aurangzéb = 3 lakhs and Muhammad Shāh = 2 lakhs (fig. 26).[130]

MARĀTHĀ ARMOURED HORSE:

Shivājī's military genius had clearly perceived the necessity of light infantry and light cavalry in guerrilla war and hill compaigns. He never allowed his cavaliers to be encumbered with heavy arms and armour or costly camp equippage.[131] Dressed in light-fitting breeches, cotton jackets and turbans, armed mainly with swords, spears, lances, bows and arrows and matchlocks, the cavaliers were ready to march at a moment's notice.

Their motto was, "Fare Hard and Journey Fast". This was their greatest advantage at heavy Muslim armies. They were extremely good at surprise. Superior discipline, greater hardihood, and greater speed more than copensated for the slighter build and the lighter weight of the Marāthā solidier.

The Marāthā cavalry (*pagā*) consisted of the regular *bargīrs* who were supplied horses by the State and the irregular *silahdārs* who provided their own horses. A unit of 12 troopers (*bargīrs*) was under a *havaldār*; five units (of 125 men) were under a *jumlādār*; ten *jumlādār* (or 1250 men) were under a *hazārī*; five *hazārīs* (6250 men) were under a *panjhazārī*. The whole cavalry was under *Sār-i-naubat* who obeyed only to *Chhatrapati* (Pl. VI).

Shambhājī, the son of Shivājī, gallantly but ineffectually, resisted the invasion of Aurangzéb whose army is thus described by Duff, "Aurangzéb marching against Sambhajī presented an arrray of gigantic men and horses completely armed and accoutred. The imperial camp was fitted with every luxury which a court could require. A megagerie accompanied the court, a complete armoury and every necessary for field".[132]

The Peshwā's cavalry had four classes: (i) *Khāsī pagā* or his private cavalry, the best, a select corps paid directly by the State, (ii) *Siladārs*, irregular, who received *nālbandī* or shoeing expenses, (iii *Ekās* or *Ekandās* or single volunteers, most numerous, with their own horse and equipments, and (iv) *Pendhāris*, predatory hordes used in plunder hence a source of income to the generals. Hardy and self-contained they could negotiate 40 miles daily on roads almost impassable for a regular army. Their habits, movements and arms were very similar to those of the Cossaks.

The Peshwā army consisted mainly of cavalry.[133] But they were no longer the hardy simple warriors[134] who could rightly call the saddle their home.[135] Forbes writes, "The Marāthā cavaliers of distinction frequently ornament their saddles with the bushy tails of the Tibet cows, as also the horse's head. On one side an attendant carries a rich umbrella, called an *āftāphqere*, generrally of velvet, embroidered with gold; on the ether, is a man with a large fan, or *chouree*, formed of the tail of the wild cow from Tibet, covered with long flowing hair, delicately white and soft as silk; the handle in gold or silver, sometimes studded with jewels.... The cruppers, martingales and the bridles of the horses are ornamented, according to the rank and wealth of the owner, with gold or

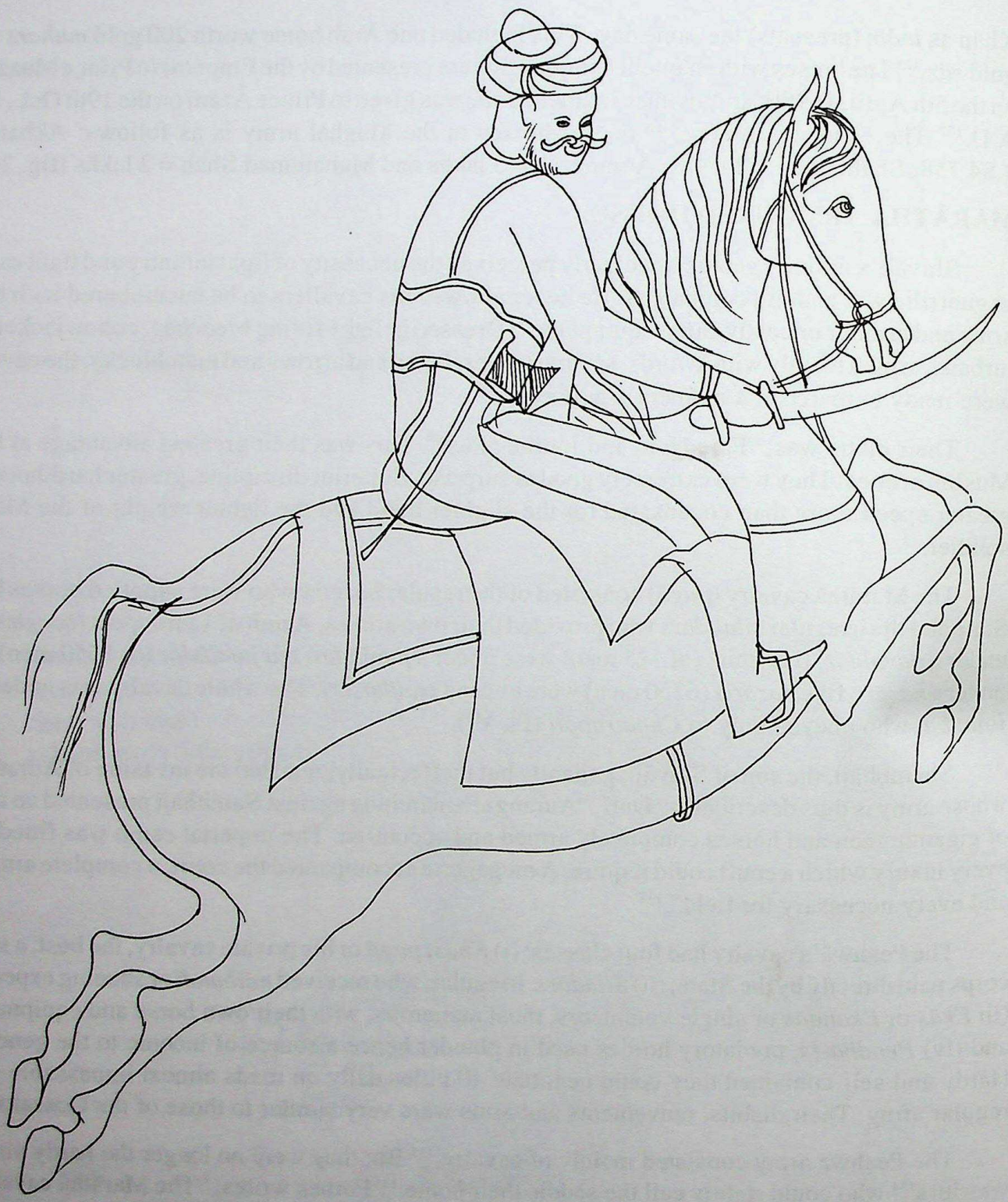

Fig. 27 A cavalier riding a galloping horse. He is carrying a battle-axe and a sword. 17th century A.D.

Fig. 28 A cavalier riding a caparisoned horse. The warrior is equipped with bow, quiver, sword, dagger and a long spear. A *kājem* is spread over the back of the animal who is embellished with *kalaghī*, breast-bands, bridle and a band below the ornamented tassels. Drawn from a miniature painting of Rājpūt school, 17th century, A.D.

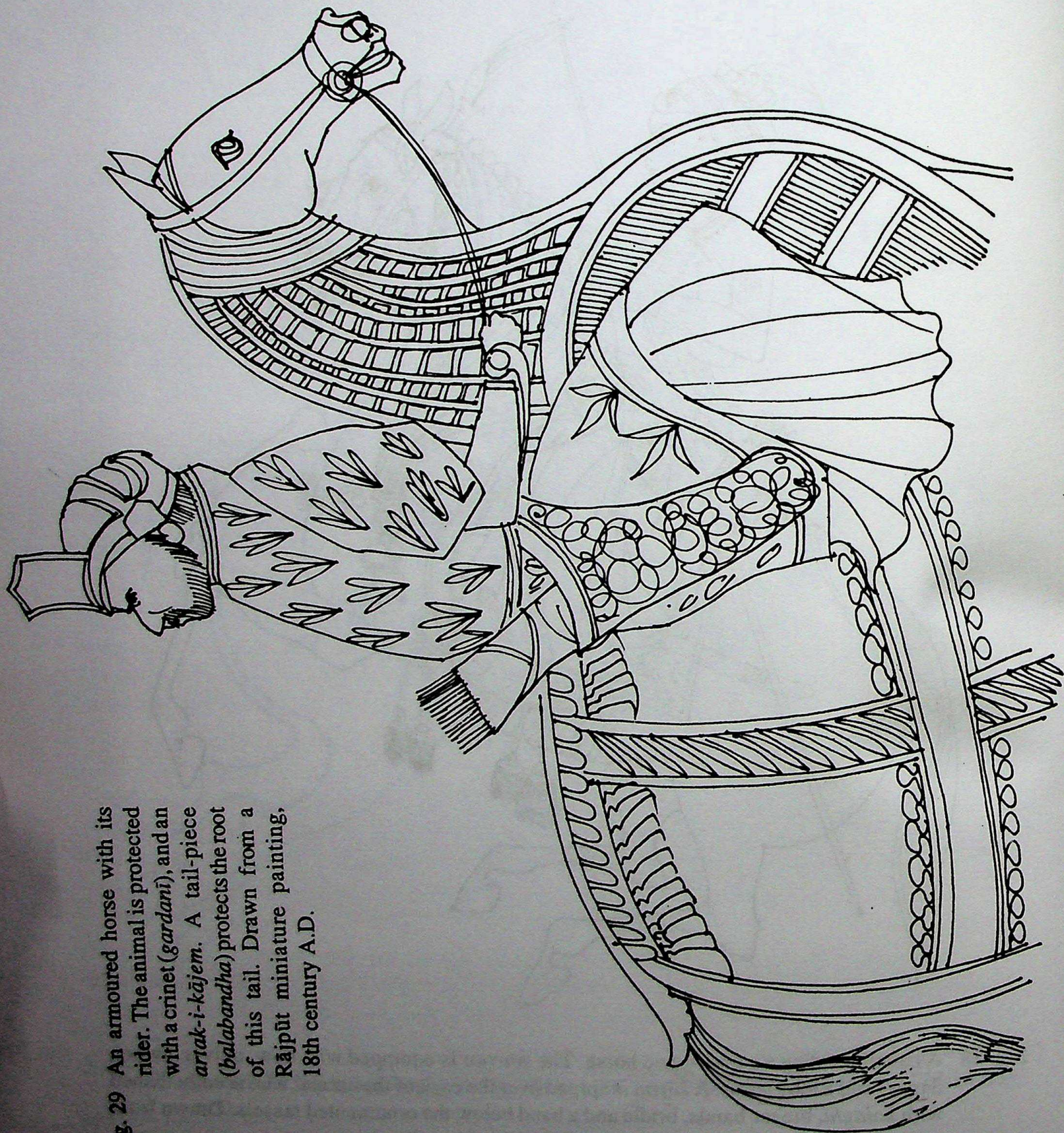

Fig. 29 An armoured horse with its rider. The animal is protected with a crinet (*gardani*), and an *artak-i-kājem*. A tail-piece (*balabandha*) protects the root of this tail. Drawn from a Rājpūt miniature painting, 18th century A.D.

silver plates, knobs, coins, and a variety of decoration; the tails of the grey horses are frequently dyed of a red and orange colour, and the manes plaited with silk and ribbands, interspersed with silver roses".[136]

EIGHTEENTH CENTURY ARMOURED HORSE:

On the 11th January, 1739, finding the resistance in vain, Zakāriyā Khān, the Mughal Governor of Lahore, visited Nādir Shāh's camp on the outskirts of Lahore, and surrendered. Zakāriyā Khān was received graciously, presented with a robe of honour, an Arab horse with a gold embroidered saddle and costly trappings, and jewelled sword and dagger, and retained in the governorship of Lahore[137] (cf. Pls. X, XI).

According to Jadunath Sarkar, the Indian cavalry at that time, prided itself on its swordsmanship and cultivated sword only and felt a contempt for missile weapons and those who used them.[138]

The Indian's crowning folly was the employment of elephants in that age of muskets and comparatively long-range artillery carried on camels.[139] They were a sure engine of self-destruction when ranged against Nādir Shāh's trained and armoured cavalry in 1739 A.D. Nādir Shāh besieged the capital. The Qizilbāsh cavalry patrolled the road to Delhi and cut down or carried into slavery all who were found. The few who slipped through the cordon of the Persian cavalry were murdered or robbed of their ally by the peasantry on the way (Pls. XII to XXV).[140]

On the 15th February, 1739 A.D., news arrived at Delhi that two days earlier Nādir Shāh's army had triumphed and Muhammad Shāh's, the then Mughal emperor, camp was invested. Finding Delhi without its ruler the Gūjars or pastoral brigands were about to rob it when Sāadat, then the Mughal General, arrived with 4000 troopers and the lawless people were overawed.[141]

On Sunday, 11th March, 1739, the massacre began. After the slaughter Nādir Shāh ordered the granaries to be sealed up and guards set over them. He also set several parties of cavalry to invest the city and prevent ingress and egress. Those who tried to leave Delhi and go to neighbouring villages in quest of food, were intercepted by the cavalry patrols, deprived of their noses and ears, and driven back into the city.[142]

The total indemnity secured by Nādir Shāh at Delhi is estimated by his Secretary at nearly 15 *krores* of rupees in cash, besides a vast amount in jewels, clothing, furniture, 'Peacock Throne', cannons, 300 elephants, ten thousand camels and one thousand horses.[143]

For nearly two months Nādir Shāh lived in Delhi and collected the contributions from the *amirs*, then held a grand court on Tuesday, 1st May, 1739 A.D., to which he sommoned the Mughal Emperor Muhammad Shāh and his nobility. These nobles, about a hundred in number, were presented with robes of honour, jewelled swords and daggers, armoured horses and other gifts.[144]

Haidar Alī organized his troops after the European model and created a special wing called *qazzākas* or 'light armoured horse'. In 1762 A.D. when the Marāthās invaded the Mysore army with one lakh horse, sixty thousand Pindāris and fifty thousand matchlock footmen, they were completely outdone by the daring villainy of the *qazzāks*. In 1768 A.D., however, the Marāthā cavalry forced Haider to retrat to Serirangapatnam.[145] Later Haidar built up a very strong cavalry

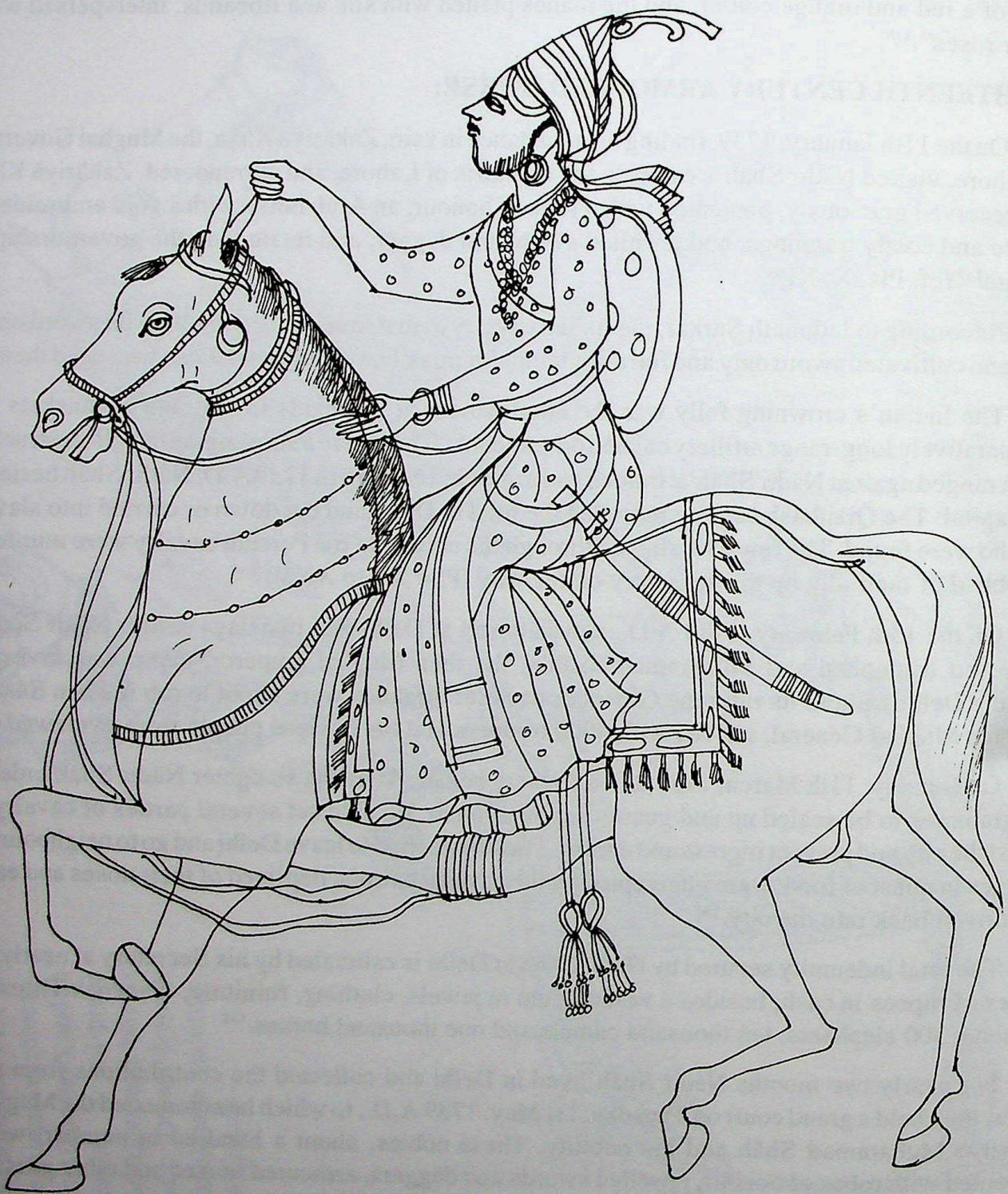

Fig. 30 A Sikh knight riding a caparisoned horse equipped with a bit, headstalls, bridle, back cover and a number of ornamental tassels, garlands and bands. Drawn from a miniature painting of Sikh school, Mandi, 19th century A.D.

of 3000 horses clad in complete armour and was in a position to challenge the European powers like the French and the British. In 1780 Haider had to face the British force commanded by General Munroe and Col. Baillie. He had in his army 12000 household cavalry, 1000 *qazzāks*, 15000 *siladār* horse, 24000 foot-soldiers and 70 guns. The company forces were defeated. Tīpū's cavalry was reputed for its valour.

CONCLUSION:

The sculptures of Bharhut and Sānchī depict caparisoned war-horses. The bit, bridle and the stirrups of some of those horses are clearly seen. The horses revealed in the reliefs of the Gāndhāra sculptures are having rich trappings. The panel illustrating *Vishvāntara Jātaka* depicts two well caparisoned horses. The horse has trellised saddle (*paryapa*). The saddle could have been a piece of cloth, probably stuffed, or of leather. The bridle consists of a thin strap, presumably of leather and includes a forehead band, cheek-piece and nose-band. The rein is simple and plain and appears to have been knotted or sewed on to a bit. "Apart from the saddle and the bridle, the horse is further embellished with a breast-band (*kakshyā*) and another similar band at the back, passing from below the tail. Near the front line of the saddle and in the side-bands are to be seen the decorations of huge rosette-shaped bosses called *chakrakas*. A flywhisk or yāk-tail crest is adorning the head of the animal. The mane is not hacked as seen in the cases of the Assyrian horses. One noteworthy feature, however, is that from the breast-band slings a row of little figurines[146] just like toy-figurines of deer facing front.[147]

The temple[148] of Koṇārka provides an excellent example of war-horse. Outside the southern facade two horse are carved; one of them is intact. This horse is richly caparisoned with bosses and bands round the face, heavy chain armour on the neck, tasselled necklaces, jewelled bracelets on legs and a tasselled breat-band which keeps the saddle in position.[149]

Some of the war-horses painted at Ajantā are caparisoned. A recently published manuscript, the *Kitāb-i- Chinghiz-Nāmā*[150] shows many armoured horses and riders. The illustrated copies of the *Bābur-nāmā* in the National Museum, New Delhi, and the *Tārīkh-i-Khāndān-i-Timūriā* in the Khudā Bux Library, Patna, depict a number of horses fully armoured.

The *Āin-i-Akbarī* describes the military equipments used in Akbar's time. The illustrated miniatures depict *artak-i-kāzem* (a triangular iron mail caparison) and *qashqā* (chanfron or the horse's head encased in an iron mask).

The Scindia, Nizam and all other native rulers had their own cavalry. With the use of fire-arms becoming more and more popular the horse did not require complete heavy armour (which also could not give them full protection), still the horse had been armoured and harnessed throughout. In all the important wars fought during the eighteenth and nineteenth centuries the armoured horse played its part very well. The Sikhs, the Rājpūts, the British, the French, the Hindūs and the Muslims all had their own respective cavalry and attached due significance to it.

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3. S.D. Singh, *Ancient Indian Warfare with Special Reference to the Vedic Period* (Leiden, 1965), pp. 50-60.
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5. A few bones of the horse have been found in association with the second phase of the Sialik Culture (4th millennium B.C.) in Northern Persia (*vide*, Stuart Piggott, *Prehistoric India* (Harmondsworth, 1950), p.157). At Rānā Ghundāi in the Zhob Valley of Baluchistān teeth of the domesticated horse have been discovered in the deposits of RG I; these people bred, besides horses, asses and cattle which were distinctly Indian (*vide, Journal of Near Eastern Studies*, V (1946), p. 316.
6. Stuart Piggott, *op. cit.*, p. 157; Mortimer Wheeler, *The Indus Civilization*, 2nd ed. (1960), p. 65.
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9. S.D.Singh, *op. cit.*, p. 55.
10. A.A. Macdonell and A.B.Keith, *Vedic Index of Names and Subjects* (Varanasi, 1958), vol. I, p. 42.
11. A.C. Das, *Rigvedic Culture* (Calcutta, 1925), pp. 225-6, however, suggests that the war-horses were actually employed in the battle during the Vedic period but his view is not supported on convincing grounds.
12. E.W.Hopkins, *The Social and Military Position of the Ruling Caste in Ancient India*, originally published in the *Journal of American Oriental Society*, vol. XIII (1889), reprinted as an independent book (Varanasi, 1972), pp. 179-80. The pages quoted here and subsequently are from the reprinted book.
13. *Rigveda*, V. 61. 1-3:
    के इष्ठा नरः श्रेष्ठतमा य एकएक आयय।
    परमस्याः पराबतः
    क्व वो स्वाह क्वा भीष्वः कथं सेक कथा यय
    पृष्ठे सदो नसोर्यमः
    जघने कोडा एषाम् वि सक्यानि नरो यमुः
    पुत्रकद्ये न जनयः
14. Also see *Rigveda*, VII. 56.1, which refers to "Rudra's young heroes borne by nobles' steeds with swords and lances as their weapons" *Cf., Rigveda*, VII. 56-3. Also see R.T.H.Griffith, *The Hymns of the Rigveda* (translated with a popular commentary), 2 vols. (Benaras, 1896-97), vol. II, p. 54 notes.
15. *Sāmaveda*, I. V. I.5.9, अविर्मर्या आ वाजम् वाजिनो अगमम् देवस्य सवितुः सबम्। स्वर्गाम् अर्वन्तो जयत।''
16. *Atharvaveda, IV.* 27.7.
17. *Taittirī ya Samhitā*, V. 4.7.
18. *Rigveda*, VI. 47.31. केतुमद् दुन्दुभिर्वावदीति। समश्वपर्णाश्चरन्ति नो नरो स्माकमिन्ड रथिना जयन्तु ॥''
19. *Taittirī ya Saṁhitā*, IV. 6.6.7; *Vājasaneyī Saṁhitā*, XXIX. 57.
20. *Vājasaneyī Saṁhitā*, XXX, 13.

21. *Ibid.*, XXX. 11; *Taittirī ya Brāhmaṇa*, III. 4.9.I, *Kathaka Saṁhitā*, XVII. 13, mentions *ashvapati.*

22. *Vājasaneyī Saṁhitā*, XXX.6.

23. *Chāndogya Upanishad*, VI.8.3. and 5.

24. *Rigveda*, X.92.11. In the sense of army the word *chaturanga* occurs in the *Atharvaveda Parishishtas* but these are supposed to be later in point of time.

25. *Sāma Vidhāna Brāhmaṇa*, III.6.11. "हस्त्यश्वरथपदातयः"

26. S.D.Singh, *op. cit.*, p. 66.

27. Vālmīki, *Rāmāyaṇa*, Book 6, canto II, verse 21, "सा पुरी परमाकीर्णा रथकुंञ्जर वाजिभिः"

28. *Ibid.*, Book 6, canto 33, verse 22, "दृश्यन्त तुरगारूढ़ा प्रासहस्ता सहस्रशः"

29. *Ibid.*, Book 6, canto 14, verse 7, "ते हयान काञ्चनपीडान" Still it was the age of the chariot and the cavaliers and the elephant - riders were subordinate to it. Kumbhakarṇa fought from a chariot which was flanked by many horses and elephants, "तं गजैश्च तुरंगैश्च स्यन्दनैश्चाम्बुदरवनैः अबुजश्युर्महात्मनो रथिनो रथिनां वरम्" *Ibid.*, Book 6, canto 65, verse 34.

30. *Ibid.*, *Araṇya Kāṇda*, canto XXV, verses 523-24;
हयान कान्चनसन्नाहान रथयुक्तान ससारथीन ।
गजांश्च सगजारोहान सह्यान सन्दिनस्तदा ॥

31. *Ibid.*, *Lankā Kāṇda*, 52.11.

32. E.W.Hopkins, however, says, "The mounted soliders are recognised as a *kulam* apart from others, but do not act together. They appear as concomitants of the war-cars, dependent groups; but separate horsemen appear everywhere. Their employment was much influenced by that of the elephant. A body of horsemen is routed by an elephant. They were, therefore, detailed in small numbers to guard the war-cars or keep on the flanks of their own elephants. To the latter indeed they are generally assigned, but even generally to be circling about the chariots," *op. cit.*, pp. 206-7.

33. *Mahābhārata*, I. 105. 9; II. 25.20; III.16. 11; III. 17.2; III. 17.2; III.268.16; IV.30.28; V.19.11; V. 149.61; V.161.2; VI.43.83; XII. 100.9, etc.

34. *Mahābhārata*, I. 102.17.

35. *Ibid.*, I. 123.7.

36. *Ibid.*, I. 124.23.

37. *Ibid.*, I. 124.24.

38. *Ibid.*, I. 51.2.

39. *Ibid.*, V. 152.16.

40. *Ibid.*, VI. 44.20, 21.

41. *Ibid.*, VI. 86.1-4; verse 5 speaks of Pāṇdava cavalry meeting the challenge.

42. *Ibid.*, IX. 22.29. प्रासयोधिनाम्

43. S.D.Singh, *op. cit.*, p. 70.

44. Hopkins, *op.cit.*, p. 263.

45. *Mahābhārata*, VI. 115.26. The Hitties also made use of messengers mounted on horseback. *Cf.*, O.R.Gurney, *The Hitties* (Harmondsworth, 1952), p. 106. Four tablets from Boghaz Koy reveal that they

References

1. C. Ffoulkes, *Armour and Weapons* (England, 1973), pp. 10-13.
2. H.Russel Robinson, *Oriental Armour* (London, 1967), p. 89.
3. S.D. Singh, *Ancient Indian Warfare with Special Reference to the Vedic Period* (Leiden, 1965), pp. 50-60.
4. John Marshall, *Mohenjodaro and the Indus Civilization* (1931), vol. II, p. 653, pl. CLXII, fig. 9.
5. A few bones of the horse have been found in association with the second phase of the Sialik Culture (4th millennium B.C.) in Northern Persia (*vide*, Stuart Piggott, *Prehistoric India* (Harmondsworth, 1950), p.157). At Rānā Ghundāi in the Zhob Valley of Baluchistān teeth of the domesticated horse have been discovered in the deposits of RG I; these people bred, besides horses, asses and cattle which were distinctly Indian (*vide, Journal of Near Eastern Studies*, V (1946), p. 316.
6. Stuart Piggott, *op. cit.*, p. 157; Mortimer Wheeler, *The Indus Civilization*, 2nd ed. (1960), p. 65.
7. *Indian Archaeology*, 1959-60 - *A Review* (New Delhi), p. 18, pl. XVI.
8. H.D.Sankalia, *Prehistory and Protohistory in India and Pakistan* (Bombay, 1962-63), p. 169 and f.n. 51; M.G.Dikshit, *Bulletin of the Deccan College Research Institute*, vol. XI (Pune, 1950), p. 51, pl. XVII. The design depicts a horse's head with mane.
9. S.D.Singh, *op. cit.*, p. 55.
10. A.A. Macdonell and A.B.Keith, *Vedic Index of Names and Subjects* (Varanasi, 1958), vol. I, p. 42.
11. A.C. Das, *Rigvedic Culture* (Calcutta, 1925), pp. 225-6, however, suggests that the war-horses were actually employed in the battle during the Vedic period but his view is not supported on convincing grounds.
12. E.W.Hopkins, *The Social and Military Position of the Ruling Caste in Ancient India*, originally published in the *Journal of American Oriental Society*, vol. XIII (1889), reprinted as an independent book (Varanasi, 1972), pp. 179-80. The pages quoted here and subsequently are from the reprinted book.
13. *Rigveda*, V. 61. 1-3:
    के इष्ठा नरः श्रेष्ठतमा य एकएक आयय।
    परमस्याः परावतः
    क्व वो स्वाह क्वा भीष्वः कथं सेक कथा यय
    पृष्ठे सदो नसोर्यमः
    जघने कोडा एषाम् वि सक्यानि नरो यमुः
    पुत्रकद्ये न जनयः
14. Also see *Rigveda*, VII. 56.1, which refers to "Rudra's young heroes borne by nobles' steeds with swords and lances as their weapons" *Cf., Rigveda*, VII. 56-3. Also see R.T.H.Griffith, *The Hymns of the Rigveda* (translated with a popular commentary), 2 vols. (Benaras, 1896-97), vol. II, p. 54 notes.
15. *Sāmaveda*, I. V. I.5.9, अविर्मर्या आ वाजम् वाजिनो अगमम् देवस्य सवितुः सबम्। स्वर्गाम् अर्वन्तो जयत।''
16. *Atharvaveda, IV*. 27.7.
17. *Taittirī ya Saṁhitā*, V. 4.7.
18. *Rigveda*, VI. 47.31. केतुमद् दुन्दुभिर्वावदीति। समश्वपर्णाश्चरन्ति नो नरो स्माकमिन्द रथिना जयन्तु ॥''
19. *Taittirī ya Saṁhitā*, IV. 6.6.7; *Vājasaneyī Saṁhitā*, XXIX. 57.
20. *Vājasaneyī Saṁhitā*, XXX, 13.

21. *Ibid.*, XXX. 11; *Taittirī ya Brāhmaṇa*, III. 4.9.I, *Kathaka Saṁhitā*, XVII. 13, mentions *ashvapati.*

22. *Vājasaneyī Saṁhitā*, XXX.6.

23. *Chāndogya Upanishad*, VI.8.3. and 5.

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27. Vālmīki, *Rāmāyaṇa*, Book 6, canto II, verse 21, "सा पुरी परमाकीर्णा रथकुंञ्जर वाजिभिः"

28. *Ibid.*, Book 6, canto 33, verse 22, "दृश्यन्त तुरगारूढ़ा प्रासहस्ता सहस्त्रशः"

29. *Ibid.*, Book 6, canto 14, verse 7, "ते हयान काञ्चनपीडान" Still it was the age of the chariot and the cavaliers and the elephant - riders were subordinate to it. Kumbhakarṇa fought from a chariot which was flanked by many horses and elephants, "तं गजैश्च तुरंगैश्च स्यन्दनैश्चाम्बुदरवनैः अबुजश्युर्महात्मनो रथिनो रथिनां वरम्" *Ibid.*, Book 6, canto 65, verse 34.

30. *Ibid.*, *Araṇya Kāṇda*, canto XXV, verses 523-24;
हयान कान्चनसन्नाहान रथयुक्तान ससारथीन ।
गजांश्च सगजारोहान सह्यान सन्दिनस्तदा ॥

31. *Ibid.*, *Lankā Kāṇda*, 52.11.

32. E.W.Hopkins, however, says, "The mounted soliders are recognised as a *kulam* apart from others, but do not act together. They appear as concomitants of the war-cars, dependent groups; but separate horsemen appear everywhere. Their employment was much influenced by that of the elephant. A body of horsemen is routed by an elephant. They were, therefore, detailed in small numbers to guard the war-cars or keep on the flanks of their own elephants. To the latter indeed they are generally assigned, but even generally to be circling about the chariots," *op. cit.*, pp. 206-7.

33. *Mahābhārata*, I. 105. 9; II. 25.20; III.16. 11; III. 17.2; III. 17.2; III.268.16; IV.30.28; V.19.11; V. 149.61; V.161.2; VI.43.83; XII. 100.9, etc.

34. *Mahābhārata*, I. 102.17.

35. *Ibid.*, I. 123.7.

36. *Ibid.*, I. 124.23.

37. *Ibid.*, I. 124.24.

38. *Ibid.*, I. 51.2.

39. *Ibid.*, V. 152.16.

40. *Ibid.*, VI. 44.20, 21.

41. *Ibid.*, VI. 86.1-4; verse 5 speaks of Pāṇdava cavalry meeting the challenge.

42. *Ibid.*, IX. 22.29. प्रासयोधिनाम्

43. S.D.Singh, *op. cit.*, p. 70.

44. Hopkins, *op.cit.*, p. 263.

45. *Mahābhārata*, VI. 115.26. The Hitties also made use of messengers mounted on horseback. *Cf.*, O.R.Gurney, *The Hitties* (Harmondsworth, 1952), p. 106. Four tablets from Boghaz Koy reveal that they

had in their employ a horse-trainer of the land of the Mitanni who worshipped Aryan gods under Indian Vedic names, *vide*, Paul Thieme, "Aryan Gods of the Mitanni Treatise", *Journal of the American Oriental Society*, vol. 80, No. 4 (Dec., 1960), pp. 301 ff.

46. The general terms for a horse in Sanskrit are *ashva, haya, turaga, turaṅga, vāha, rathavāha, vāji*, etc. The horse-riders were called *ashvārohā, hayārohā, hayārohāvarā, vājin, sādin*, etc.

47. The favourite horse of Alexander was Buchephalus and that of Rāṇā Pratāp was Cẖetak. Many horses mentioned in the Mughal works had names.

48. E.W. Hopkins, *op. cit.*, p. 201.

49. *Mahābhārata, Bhīsma Parva*, 57.11.19: *Droṇa Parva*, 165.21, etc.

50. *Dīgha*, III, 200; *Majjhima*, III, 173, 174, 176; *Saṁyutta*, 1.73. "हाथ्थिकायो अस्सकायो रथकायो पत्तिकायो" *Aṅguttara*, III.151, has, "बलवा खो पन होती चतुरंगिनीया सेनाय समन्नागतो अस्सवाय ओवादपटिकराय"; III, 157-158, 161-162, 397, etc.

51. *Vinaya*, I. 241, 342; II. 182; IV. 105. In the *Raṭṭhapāla Sūtta* of the *Majjhima Nikāya* (II.69); Kuru king is said to have become expert in handling a war-horse at the age of twenty.

52. *Vinaya*, III.5.

53. *Majjhima Nikāya*, I. 446; II. 129; III. 222.

54. *Ibid.*, I. 446.

55. One of the feats was *khurakāya* in which the horse was trained to go along on the tips of its hoofs so that no sound was heard, *vide*, *Majjhima Aṭṭhakathā*, III. 159, also see Horner, *Pali Text Society Series*, No. 30, p. 118, *f.n.*4.

56. *Saṁyutta Nikāya*, IV. 310. Woodword renders *ashvāroha* in *Saṁyutta*, I. 83-84.

57. *Vinaya Piṭaka*, IV. 107-108.

58. J.W. McCrindle, *Ancient India as Described in Classical Literature*, reprinted (New Delhi, 1979), p. 142.

59. J.W. McCrindle, *India and Its Invasion by Alexander, the Great* (Westminister, 1896), pp. 104-6.

60. Megasthenese, *Indika*, Frag. XVI.

61. Kauṭilya, *Arthashāstra*, Book X, chapter 5.

62. *Ibid.*

63. R.N.Mehta, *Pre-Buddhist India* (1939), p. 163.

64. V.A.Smith, *Catalogue of the Coins in the Indian Museum, Calcutta* (1906), pp. 43-4; Percy Gardner, *The Coins of the Greeks and Scythic Kings of Bactria and India in the British Museum*, pl. XX.2; XIX.4.

65. John Allan, *Cataloque of the Coins of the Gupta Dynasties and of Shashanka, King of Gauda* (London, 1914), pl xxii.

66. P.C.Chakravarti, *The Art of War in Ancient India* (Dacca, 1941), p.40; *Bṛihat Saṁhitā*, 66.12 ff; *Garuḍa Purāṇa*, 207.4.5.

67. Kalhaṇa, *Rājataraṅgiṇi* VIII. 728; *cf.*, Kāmandaka, *Nītisāra*, XX. 5-6; *Agni Purāṇa*, 242-25-26; *Nīti Prakāshikā*, VI. 64-65; *Nītivākyāmṛta*, 22.8.

68. Someshvara, *Mānasollāsa* (or *Abhilāsitārtha-chintāmaṇi*) edited by Gajānan K. Shringodekar, Gaekwad's Oriental Series No. 28; *Mānasollāsa*, verse 1187, and I, 81-85.

69. Somadeva Suri, *Nītivākyāmṛta*, published in the Grantharatnamālā Series (Bombay, 1890), pp. 83-4;

Hemasūrī, *Yuktikalpataru*, pp. 181 ff.

70. *Mānasollāsa*, *op.cit.* I, 81, verse 574.

71. Jagdish Narayan Sarkar, *The Art of War in Medieval India* (New Delhi, 1984), p. 99.

72. Clifford Edmond Bosworth, *The Ghaznavids, their Empire in Afghanistan and Eastern Iran* (994-1040) (Edinburg, 1963), ch. III, pp. 112-3.

73. Marco Polo (1308 A.D.) testifies that in Malābār (modern Madurā) alone 2000 horses were imported from 'foreign regions' at considerable cost. The total number of Arab and Persian horses imported annually was about 10,000 valued at 2,2000,000 *dīnārs* at the time of Abu Bakr (7th century A.D.).

74. E.C.Sachau, *Alberuni's India*, reprinted (New Delhi, 1983), I, p. 208, describes the deficiency in horse-supply and in weapons. Regarding the Malābār trade Marco Polo writes "The merchants of Curmos, of Orissa, of Dufar, of Soer, and of Aden, whose provinces contain many steeds of fine quality, purchase, embark and bring them to the king and his four princely brothers, selling them for 500 *sāgī* of gold, worth more than 100 marcs of silver" *cf.*, Sir Henry Yule, *The Book of Ser Marco Polo*, vol. II (London, 1903), p. 296.

75. Abdullāh Wassāf in *Tārīkh-i-Wassāf*, partly written in March, 1300 A.D. and completed in 1328 A.D., says, "It was a matter of agreement that Maliku-i-Islām Jamāluddīn and the merchants should embark every year from the island of Kais and land at Malābār 1400 horses of his own breed, and of such generous origin that, in comparison with them the most celebrated horses of antiquity, such as the Rukhs of Rustam, etc., should be as worthless as the horse of the chessboard. It was also agreed that he should embark as many as he could procure from all the isles of Persia, such as Kalif, Lahsa, Bahrein, Hurmuz and Kulhatu. The price of each horse was fixed from of old at 220 *dīnārs* of red gold, on this condition, that if any horses should sustain any injury during the voyage, or should happen to die, the value of them should be paid from the royal treasury. But actually it was paid out of the overflowing revenues of the estates and endowments belonging to the Hindu temples, and from the tax upon courtesans attached to them". Wassāf has criticised the dietary arrangements and system of training of horses in India. He says, "strangely enough the imported horses are given roasted barely instead of raw barley and grain dressed with butter, and boiled cow's milk to drink. These are bound with ropes and pegs for forty days in a stable in order to become fat. Later on, without due training, without stirrups and other appurtenances of riding, the Indian soldiers ride upon them. They are equal to Burak in celebrity, and are employed either in war or in exercise. In a short time the most strong, swift, fresh, and active horses become weak, slow, useless and stupid. In short, they all become wretched and good for nothing. In this climate these powerful horses which fly swiftly without a whip should they happen to cover, become exceedingly weak and altogether worn out and unfit for riding. There is, therefore, a constant necessity of getting new horses annually, and, consequently the merchants of Muhammadan countries bring them to Malābār". *Tāziyāt-ul-Amsar*, quoted by Elliot and Dowson, *History of India as Told by its Own Historians* (1867-77), vol. III, pp. 33-34.

76. The Turkoman horse is tall with a long narrow body, long thin legs and neck. On their predatory expeditions the Turkomans often cover 650 miles in the waterless desert in five days. They owe their power to the training of thousands of years in the endless steppes and deserts, and to the continual plundering raids, which demanded the utmost endurance and privation of which horse and rider were capable. *Cf.*, *Cambridge Medieval History*, vol. I (Cambridge, 1911), p. 33.

77. One of the reasons why the Hindūs could never evolve a cavalry system comparable in strength and efficiency to that of the Greeks or Muhammadans, was the lack of good horses in India. In the *Mahābhārata* also the most famous horses are said to have come from Sindhu or Bahlika or Kamboja. The Deccan states suffered the hardship even more than the Northern states. Describing about the Malābār coast Marco Polo says, "there is no possibility of breeding horses in this country", *vide* Henry Yule, *The Book of Ser Marco*

Polo translated and edited with note (London, 1903), vol.II, p. 342.

78. M. Habib and K.A.Nizami (ed.), *A Comprehensive History of India*, vol. V (The Delhi Sultanate), (Delhi, 1970), p. 186.

79. This element of mobility was totally absent from Indian armies. Sir Jadunath Sarkar remarks, "The arms and horses of these trans-border invaders gave them indisputable military superiority over the Indians. Their provisions also were carried by fast trotting camels which required no fodder for themselves but fed on the roots and leaves of the wayside, while the Banjārā pack-oxen of the Hindū commissariat were slow and burdensome", *Military History of India* (Calcutta, 1960), p. 26.

80. In one such 'horse-show' the jealous brothers of Iltutmish forcibly sold him, when he was still a child, to a slave-dealer.

81. H. Habib and K.A. Nizami, *op. cit.*, p. 273.

82. Ziyāuddīn Baranī, *Fatawāi-i-Jahāndārī*, English tr. with notes by M. Habib and (Mrs.) Afsar Khan under the heading *The Political Theory of the Delhi Sultanate* (Allahabad), p. 60.

83. Baranī, *op. cit.*, p. 108.

84. Earlier in 1299 A.D., the Mongols tried to advance to Gujarat through the Thār desert, but they were defeated by Alph Khān, one of the generals of Alāuddīn Khaljī. "Eighteen thousand Mongol horsemen and three thousand horse-riding ladies (*khātūns*) were captured and sent to Delhi".

85. Rāi also gave one hundred young and powerful war-elephants. "They were the mad elephants of Mālābār and not the vegetarian elephants of Bengal", *vide*, Amīr Khusrau, *Khazainal Futuh*, Eng. tr. by M.Habib entitled, *The Campaign of Alāuddin Khaljī* (Madras, 1931), pp. 112-72.

86. According to the procedure of those days, a man who wanted service with the state cavalry had to provide himself with one or two horses and the necessary equipments and then appear at the review or *arz*. Here he was carefully examined and if found fit the price of the horse was paid to him and he was included into the cavalry. But since most horsemen could not afford a horse before *arz*, some wealthy middle men purchased the horses and took commission both from the horsemen and the officer-in-charge. Alāuddīn changed this system. Stern order was issued that no horse-merchant or capitalist could purchase a horse from the horse-market, *vide*, M. Habib and K.A.Nizami, *op. cit.*, pp. 384-5.

87. "The *tańkā* of that time", Ferishtā tell us, "was one *tolā* of minted gold or silver; and a silver *tańkā* was equal to fifty *jītals* or copper coins", *vide*, Md. Abul Qāsim Hindū Shāh surnamed Ferishtā, *Tārīkh-i-Ferishtā or Gulshan-i-Ibrāhīmī*, Eng. tr. by Briggs under the title *Rise of Muhammadan Power in India*, 4 vols. (London, 1829), reprinted (New Delhi, 1981); M. Habib and K.A.Nizami, *op. cit.*, p. 378.

88. *Vide*, M.Habib and K.A.Nizami, *op. cit.*, p. 384.

89. The importance of cavalry was realised specially in the first expedition of Sind (1361 A.D.) where the outbreak of an epidemic among the horses greatly told upon the strength of the army and led to the failure of the Sultān, *vide*, Shams-i-Sirāj Afīf, *Tārikh-i-Firūz Shāhī* edited by Wilayat Husain (Calcutta, 1937), p. 200.

90. *Vide, Islamic Culture* (October, 1937), p.465. The post at that time was held by Malik Yākūb.

91. Considering that the empire of Firūz was confined to Northern India only, the strength of his cavalry appears to be quite large as compared to that of Alāuddin Khaljī (75000) and Muhammad Tughluq (90,000) *cf.*, J.M.Banerjee, *History of Firūz Shāh Tughlug* (Delhi, 1967), p. 130. During his first expedition to Bengal in 1353 A.D. the Sultān had 80,000 horses with him.

92. Ziyauddīn Baranī, *Tārīkh-i-Firūz Shāhī* ed. by Sir Saiyyid Ahmad Khan (Calcutta, 1862), p. 477.

93. These included several armoured elephants, one rhinoceros, many other animals and birds. Gifting of horse was a regular practice. In June, 1508 A.D., Sultān Sikandar Lodī (1489-1517 A.D.), had sent a gift of a pair of rhinoceros, thirty war-horses and other commodities for Mahmud Begarhā of Gujarat, who, in his turn, sent some parrots, herons and Arabian horses as presents for Sikandar Lodī, *vide, Maāsi r-i-Mahmūd Shāhī* by Shamsuddīn, Commonwealth Relations Library (No. 3841), ff. 37a-37b.

94. M. Habib and K.A.Nizami, *op. cit.*, p. 879.

95. Ferishtā, *op. cit.*, p. 422.

96. A.S. Beveridge (tr.), *Bābur-nāmā*, reprinted vols. I & II in one format (New Delhi, 1970) , p. 195; *Bābur-nāmā*, folio 125.

97. In 1791 A.D., Muhammad Effendī shot 482 yards from a Turkish bow. Still longer ones are on record.

98. A.S.Beveridge, *op.cit.*, p. 140; *Bābur-nāmā*, folio 90.

99. This is that part of a horse, covered by the two side-pieces of a Turkī saddle, from which the side-arch springs on either side.

100. A.S.Beveridge, *op.cit.*, p. 253; *Bābur-nāmā*, folio 161.

101. In the Pānīpat battle the left turning party was under Karā Kāzī, Sheikh Barīn and Mahdī while the right turning party was controlled by the generals like Walī Kāzil, Malik Kāsim and Bābā Kushka.

102. Jouher, *Tezkereh Al Vakiāt*, translated into English by Charles Stewart under the heading, *Private Memoirs of the Moghul Emperor Humāyūn*, reprinted (Delhi, 1972), p. 54.

103. P. Sensarma, *The Military Profile of Sher Shāh Sūr* (Calcutta, 1976), p. 108.

104. *Āin-i-Akbarī*, I, *Āin* 49, H. Blochmann (tr.) (Calcutta, 1873), reprinted (Delhi, 1965), p. 140.

105. During Akbar's time fine horses were bred within the country also. The horses bred in Kutch were equal to the Arabian horses. In Punjab the horses resembled the Irāqī ones and were called *sanūjī*. In Agra, Mewar and Ajmer the horses called *pachwariyā* were bred, in the Himālayan district *guṭ* were bred and in Bengal *tanghān* were bred. All these horses were properly harnessed and armoured.

106. The Arabian and Persian horses were certainly superior. In the *Tuzuk-i-Jahāngīrī*, translated by Alexander Rodgers and edited by Henry Beveridge, reprinted (vols. I and II in one format) (Delhi, 1968), vol. I, p. 110, it is recorded that in the year 1608 A.D., Jahāngīr arranged a horse race. All the race-horses (*aspān-i-dāwanda*) took part. A baby Arab horse, which Ādil Khān, the ruler of the Deccan, had presented to Jahāngīr, stood first.

107. The head of all *khāsa* horses was called *atbegī*. At that time Mirzā Khān Khānā Abdur-Rahīm, son of Bairam Khān, was the *atbegī*. There were many other officers including the *akhtāchīs* who looked after the harness and had the horses saddled.

108. A. Rogers and H. Beveridge (tr.), *op. cit.*, vol. I, p. 172.

109. *Ibid.*, vol. I, p. 222.

110. *Ibid.*, vol. I, p. 229. In the tenth regnal year Mahābat Khān was appointed the Governor of Deccan and was presented with a jewelled dagger (*phūl kaṭāra*), a special *nādirī* (a dress) and an ambling horse with a saddle. About 3000 war-horses along with war-elephants and artillery were sent with Mahābat Khān and an amount of Rs. 30 lakhs was sanctioned for their expenses on the way (*ibid.*, p. 299).

111. *Ibid.*, vol. I, p. 334. Jahāngīr has described a strange custom which he says was prevalent with the Hindus at that time. He says, "If the movement of kings or the great men for the conquest of a country is towards the east they should ride a tusked elephant; and if the movement is towards the west, on a horse of one

colour; if towards the north, in a palanquin or a litter (*siṅghāsan*) and if towards the south, on a *rath* which is a kind of cart (*arābā*) or *bahal* (two-wheeled cart)" (*Ibid.*, p. 340).

112. *Ibid.*, vol. I, p. 439.

113. *Ibid.*, vol. I, p. 443.

114. *Ibid.*, vol. II, p. 209.

115. *Ibid.*, vol. II, p. 231. The mounted archers and foot-archers lost their vocation when guns came in use. Most of them became cavalry soldiers. Such archers have been called *tarkash bandān* or quiver-holders.

116. Sāqī Mustād Khān, *Māssir-i-Ālamgīrī*, translated into English and annotated under the heading "*A History of Emperor Aurangzéb-Ālamgīr (reign 1658-1707 A.D.)* (Calcutta, 1947), p. 53.

117. *Ibid.*, p. 67.

118. *Ibid.*, p. 73. He also received a special robe, a jewelled dagger, a *kalaghī* and a female elephant.

119. *Ibid.*, p. 80. He also got a *jighā* of jasper set with jewels.

120. *Ibid.*, p. 87. He was confirmed as *thānédār* of Gwalior.

121. *Ibid.*, p. 93. Also given was an elephant with silver *sāz*.

122. *Ibid.*, p. 98. The horse alone was worth 500 gold *muhars*.

123. *Ibid.*, p. 108. He was also given a quiver, a bow-case, a jewelled *sarpéch and muttakā*.

124. *Ibid.*, p. 128. Later the Rāṇā himself was given a dagger with *phūl-kaṭāra*, an elephant with silver *sāz* and a horse with gold trappings.

125. *Ibid.*, p. 14. He was also given a jewelled *phūl-kaṭāra* dagger with pearl *ilaqa* worth 7000 rupees and an elephant, from the Emperor's own stable, worth 15,000 rupees.

126. *Ibid.*, p. 225. In addition the Prince was given diamond *sarpéch* worth one lakh of rupees, an elephant with silver *sāz* and *talāir* and a jewelled sword.

127. *Ibid.*, p. 248. The Prince also received a special robe and a jewelled *ḍhakdhakī*.

128. These included all the horses maintained by the *zamīndār* retainers throughout the kingdom besides the army proper.

129. The horses were divided into seven classes such as 'Arabī', 'Persian', 'Turkī', 'Tāzis', 'Mujannas', 'Yābus' and 'Janglā', *vide*, Blochmann, *op. cit.*, p. 246.

130. *Vide*, William Irvine, *The Army of the Indian Moghuls*, reprinted (New Delhi, 1962), p. 61.

131. The heavy Mughal cavalry covered with armour and the elephants with their towers full of armed men were able to manoeuver with facility on the plains of India or on the tableland of Deccan, but their defects were revealed when they were brought into collision with the Marāthās of the hilly area.

132. J.C.Grant Duff, *A History of the Marāthās* (in three volumes), vol. I, pp. 181-2.

133. *Ibid.*, p. 30. For Marāthā cavalry see J.N.Sarkar, *Shivaji and His Times*, 6th ed. (Calcutta, 1961), pp. 359-366; *Military History of India*, reprinted (New Delhi, 1969), p. 161, G.S.Sarabhai, *New History of the Marāthās* (Bombay, 1946-48), vol. I, pp. 276-9.

134. A cavalry regiment during the Peshwās was generally served by a number of attendants, and that under Rānojī Bhonsle had 5 *kārkuns* and 181 attendants though its fighting strength was only 700. There were in this regiment 9 *rikibdārs* (stirrup-holders), 5 farriers, 8 camel-drivers, 4 *khidmatgārs*, 3 musicians, 2 scouts, 5 *kothavāles* (store-keepers), 2 *jāmdārs* (wardrobe-keepers), 13 *bhois* (palanquin-bearers), 2

saddlers, 1 washerman, 2 mace-bearers, 1 leather-worker, 1 sweeper, 2 drummers, 4 messengers, 1 torch-bearer, 1 barber, 1 tailor, 7 water-carriers, 2 sunshade-bearers, 2 trumpeters, 4 *mahatgadkarīs* (elephant-drivers), 1 *potdār* and 99 grooms, *vide*, Surendranath Sen, *Administrative System of the Marāthās*, third edition (Calcutta, 1976), p. 276.

135. When Shivājī led his army to the Karnataka he had with him only two rough small tents, one for himself and the other for his ministers. But the Marāthā chiefs, who accompanied Sadāshiv Rāo to the fatal field of Pānīpat, in 1761 A.D., needed, like the Mughal officers of Aurangzéb, costly tents, splendid equipments and comforts and luxuries of all sorts.

136. Forbes, *Oriental Memoirs*, vol. II, pp. 41-44.

137. Jadunath Sarkar, *Nādir Shāh in India*, reprinted (Calcutta, 1973), p.31.

138. *Ibid.*, p. 54. In describing the battles with the Persians for the possession of Qandhār in the middle of the 17th century, the Delhi court historian smears at the Persian troopers for declining sword-combats with the cavaliers of Hindustān. He taunts the Persians with cowardice pretty nearly in the same tone as the English writers employed during the First World War in speaking of the German soldiers who did not stand up to receive the bayonet charges of the British infantry.

139. Elephants had earlier failed against mobile cavalry using missles in the times of Alexander, the Great, when fire-arms were unknown, and more recently in 1526 A.D., against Bābur's horsemen with their few slow and primitive guns.

140. Jadunath Sarkar, *op. cit.*, p. 61.

141. Anadram, *Tazkirā* (Aligarh Col. Ms), 38-41.

142. Hanway, *Travels*, 3rd ed., ii, 384, 377-378.

143. The grand total from all source is raised to 70 *krores, vide* Hanway, *op. cit.*, 383, 389.

144. With his own hands Nādir Shāh placed the crown of Hindustān on the head of Muhammad Shāh and tied a jewelled sword round his waist.

145. Haider marched with his son Tīpū in the centre and his advanced and rear guards, formed of his infantry and artillery, on his flanks. A shot from the Marāthā gun fell among the string of camels carrying rockets and one of the rockets took fire which created confusion. The Pindārīs took advantage of this confusion and routed the Mysore army. Both Haider and Tīpū had a narrow escape.

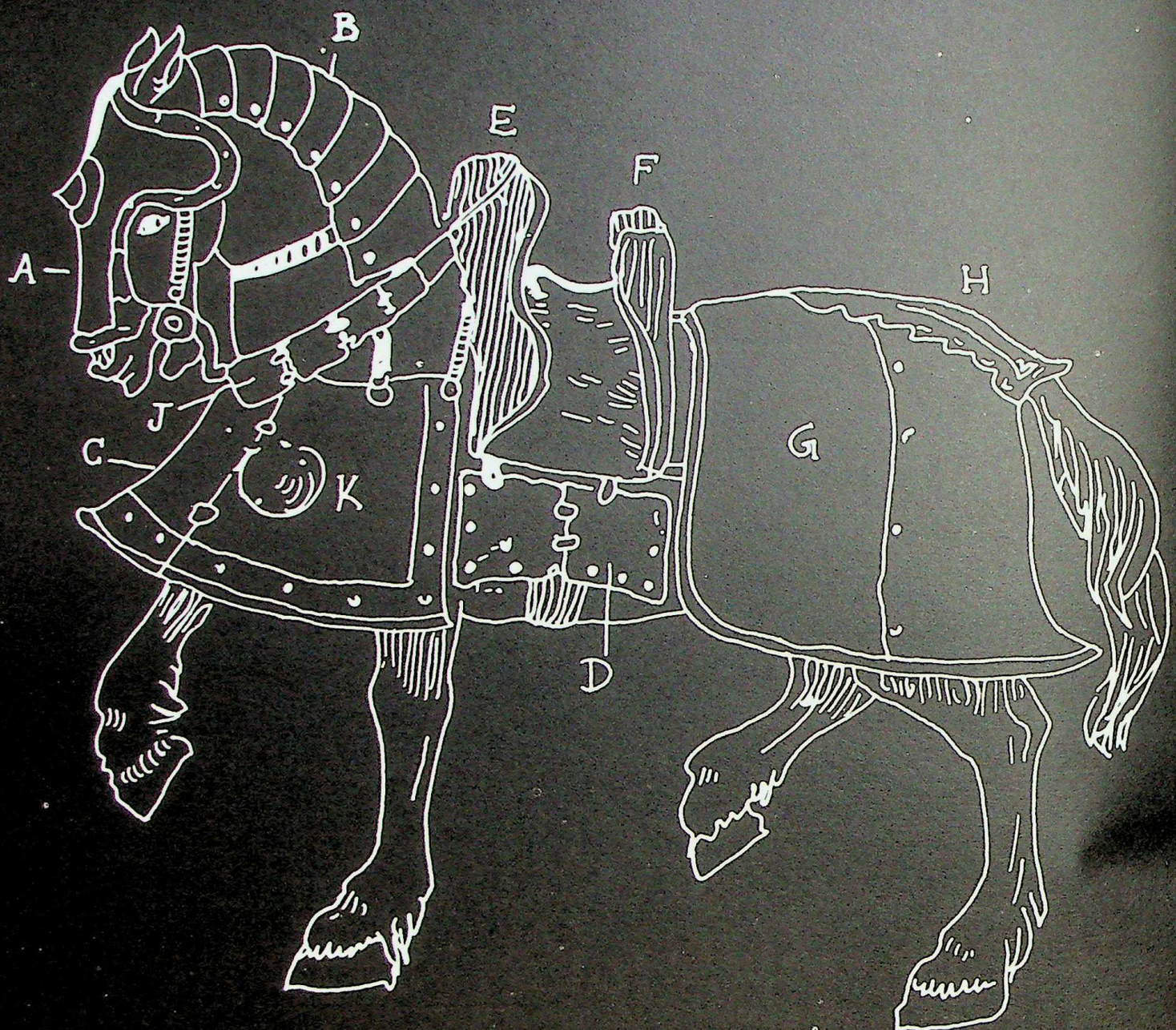
146. These are probably *lavaṇa kalāyī* mentioned by Bāṇa.

147. K.Krishna Murthy, *The Gāndhāra Sculptures: A Cultural Survey* (New Delhi, 1977), p. 99, fig. XXII.1.

148. In several sculptures of the Bhubaneshwara temples we meet with processions of infantry, cavalry and elephantry. In a frieze is carved a scene of war-horses with heroes on them.

149. E.B.Havell, *Indian Sculptures and Paintings*, says, "Here Indian sculptors have shown that they can express, with a much fire and passion, as the greatest European art, the pride of victory and glory of trumphant warfare; for not even the Homeric grandeur of the Elgin marbles surpasses the magnificient movement and modelling of this Indian Achillies and the monumental war-horse in its massive strength and vigour is not unworthy of comparison with Verachio's famous masterpieces at Venice", p. 147.

150. J. Marek and H. Khizkova, *The Jenghiz Khān Miniatures From the Court of Akbar, the Great* (London, 1963). The manuscript is in the Imperial Library, Tehran and was completed in Akbar's period on 25th May, 1596 A.D. Though these bear Persian influence yet they are not a slavish copy. The arms and armour, both for men and animals, together with other items, have so minutely been painted that they prove that they have been observed by the draughtsman and not just copied from the copy of a copy.



A Chamfron
B Crinet
C Peytral
D Flanchards
E Arcon
F Cantel
G Crupper
H Tail-guard
J Metal rein-guard
K Glancing-knob

3
Horse Armour and Harness

INTRODUCTION:

The people of Indus bred horses; the people of Vedic age employed them in war but the animal was still not harnessed. The first mailed horse appears in the *Rāmāyaṇa* though the horseman of the Rāmāyaṇa and the Mahābhārata era sat on no proper saddle, nor did he have stirrups. He wore his armour and carried his javelin, lance and sword since his bow and arrow could not be effectively used from horseback in the absence of stirrups and saddle.

Chain armour, leather robes, wooden breastplates, tail bands, plumes, leather straps, girth-bands, reins and bridle are alluded to, among the items of the horse harness in the *Rāmāyaṇa* and the *Mahābhārata*.

HORSE FURNITURE, HARNESS AND BARDINGS:

The following is the description of the Indian horse furniture in the Codrington Collection, London.[1]

Bālā tang:	Surcingle of silk.
Dumchī:	Crupper of leather covered with velvet and small metal bosses.
Gulūband:	Strips of velvet flowered with silk, for mane.
Khogir:	Saddle, red velvet.
Kafalposh:	Loin-covering of black velvet.
Unniannan:	Reins of rope covered with velvet.
Pultāh:	Headstall covered with velvet and ornamented with metal.
Oostuck:	Saddle-cloth to be worn over saddle.
Lāgseam:	Bit
Shikarband:	Bunches of string covered with velvet to be fastened to corners of saddle.
Zerband:	Martingale of red silk net.
Rikāb:	Iron stirrups.
Turrāh:	Ornament for the hed, of feathers and gold.
Mālā:	Necklace of metal for the neck.
Padak:	Metal ornaments for the neck.
Koḍā:	Whip.

Fig. 31 Armoured knight on an armoured horse. The knight is protected with a ribbed helmet, a coat of chain mail fitted with *chār-āinā*, hand armour and long boots. The animal is fully guarded with a chanfron, crinet and *artak-i-kājem*. Specially noteworthy is the cuello (armour for the underneath of the horse) made of rectangular plates. Drawn from a miniature painting of Akbar's period, *c.* 1600 A.D.

Sulmānī manakā: Amulet of stones and shells for neck.
Ghāgrī: Rattle of metal tied on to the leg.

Some of the items of the horse harness are described below:

CHANFRON OR QASHQĀ: (Pls. XXXVII, XXXVIII, XXXIX)

It is also spelt as 'chanfron', 'champfron', 'champfrein' and 'shafron'. In Urdu it is called *gashagh* or *qashqā*. It is an armour for a horse's head and is usually a plate moulded into the shape of the front part of the horse.[2] Some scholars differentiate a 'chanfron' and a 'frontlet'. According to them the 'frontlet' covered only the front part while the 'chanfron' covered the front as well as both the sides.[3] In common use both the words are taken to be synonymous. Sometimes only the upper part of the horse's face was protected and such armour are called 'demi-chanfron' or 'demi-frontlet'. The following types[4] of chanfrons are available in India:

A. Chanfron made of one single plate. It covered the full front and the sides above the eyes.[5] It sometimes had a pointed knob on the forehead which was a decorative motif and also served as a pricking nail in close combat. (Pl. III)

B. The chanfron with its front part made of plates and the sides protected by interlinked mails (like the camail in a helmet).

C. The chanfron provided with hinged cheek-pieces.

D. Demi-chanfrons.

E. Sindhi chanfrons made of several plates and little mail.

The Indian chanfron usually had a holder for a plume. The earliest chanfrons were made of leather (or boiled leather) and later of metal. During the Mughal period, as per the depiction in the miniature paintings,[6] the *qashqā* was a single steel plate, moulded in the form of horse's head with straps around the jaws.[7]

Some horses are depicted in the miniature paintings as wearing a smaller frontale or 'demi-frontlet'. It protected only the top of the animal's head and left the eyes, the whole mandible and forehead uncovered.[8] This kind of demi-frontlet has not been described by Abul Fazl.

In Sindh were popular the chanfrons made of plate and mail combined. The constructional details tally with that of human armour similarly made.

Bārbosā, in the beginning of the 16th century A.D., gives an account of the King of Cambay, and shows that the arms and armour of that part of India were influenced by the importation of the Turkish weapons. He says, "The King of Cambay is a Moor. His men-at-arms carry very thick round shields, edged with silk, and two swords each man, a dagger, and a Turkish bow, with very good arrows; some carry steel maces and many of them coats of mail and other tunics quilted with cotton. The horses have housings of steel head-pieces".[9] Probably this 'head-piece' was some kind of chanfron.

The chanfrons were both plain (fig. 32) and decorated. In the *Āin-i-Akbarī* is depicted a full chanfron (fig. 33), made of one single piece with three straps fastened to it. It is decorated all over

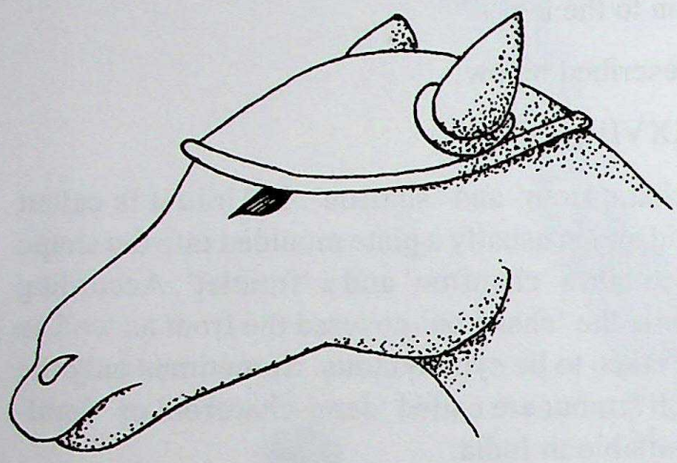


Fig. 32 *Qashqā* or chanfron for horse's head. It covered only the forehead and is made of a single piece of steel.

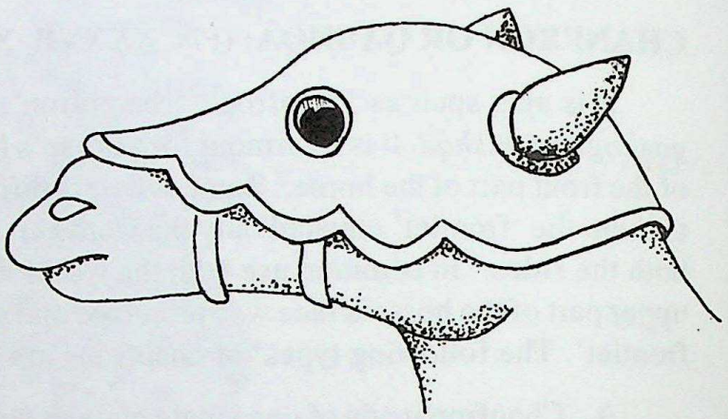


Fig. 33 Chanfron for horse's head, covering it completely. It is made of one piece with two straps fastened to it. Based on an actual example, 18th century A.D.

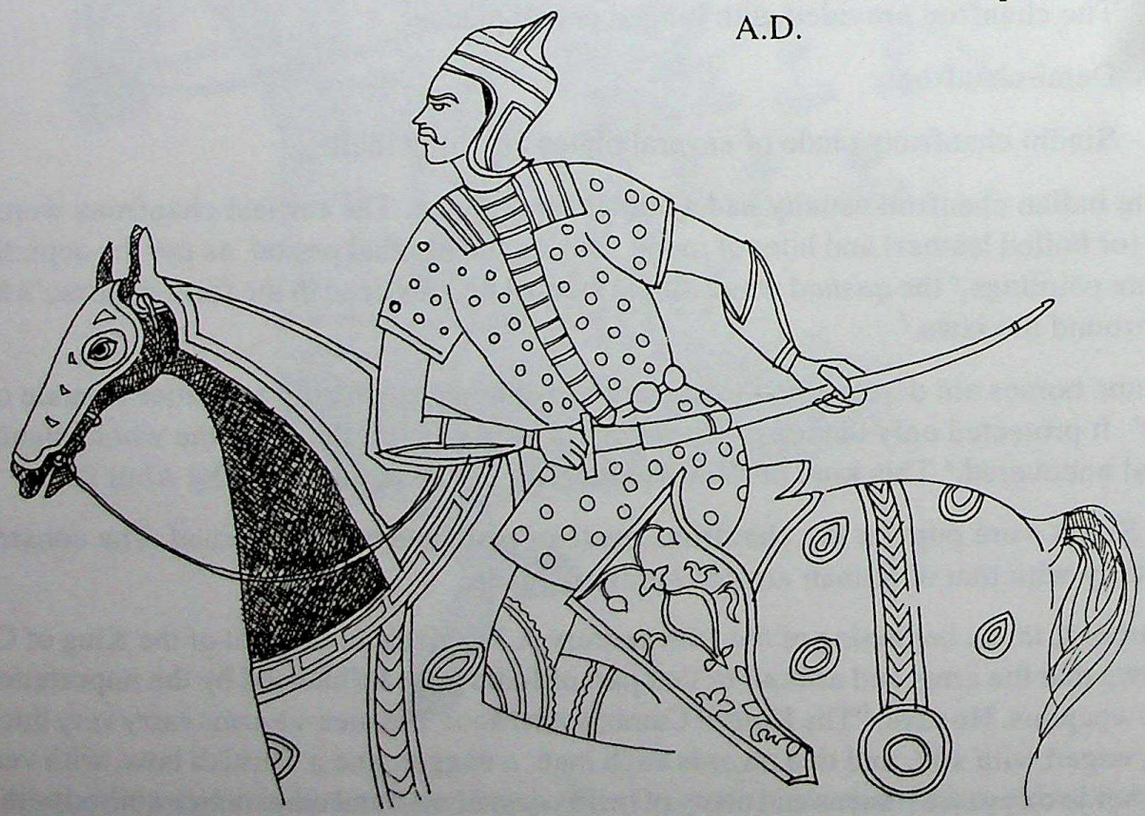


Fig. 34 A cavalier decked with a ribbed helmet, an armoured coat, arm-guards and knee-guards. The horse is guarded with a chanfron, a crinet and an *artak-i-kājem* fitted with a crupper. Drawn from a painting of the Rājpūt school, early 18th century AD.

with the geometrical designs.[10] The chanfron displayed in the National Museum, New Delhi, is made of a single solid piece with a medial-rib. It is ascribable to the 17th century A.D.

CRINET OR GARDANĪ:

It is also called 'criniers' and was used to cover the upper side of the neck of the horse. It was made of a series of articulated plates or of alternate narrow plates and strips of mail. This is rarely found in India and, whenever available, reflects European influence. In fact it became very popular only after the Britishers became the masters of India in the 18th century A.D. Some of the horses employed by Sirāj-ud-daulā in the battle of Plassey (1757 A.D.) were so armoured.[11]

The *gardanī* described and illustrated in the *Āin-i-Akbarī*[12] is a slightly curved metallic piece decorated with floral design (fig. 35).[13] Similar neck armour are available in the miniature paintings of the Mughal India (figs. 18, 19, 20) (Pl. III).

CUELLO:

It was an armour for the underside of the horse's neck (fig. 31). It was hung from the crinet. Sometimes it was entirely of articulated plates, sometimes of mail and sometimes of plate and mail combined (fig. 36). It is a very rare piece of armour and apparently very rarely used in India.[14]

PLUME OR KALAGĪ (Pls. XXVI, XXX, XXXII, XXXIV):

It was purely an ornamental trapping and has been used in India since long. The horses painted in Ajantā have beautiful plumes. It was made of the tail of the *bos grunnions*, which is usually an adornment of the palace, one of the royal insignias, carried by princes upon the field (*chāmara* or *vyajana* and *vala* together).[15] It was worn on the head of the horse often with a *kakshā* or *kakshyā*, the girdle or girth-band.[16] It has been used throughout.

BRIDLE OR LAGĀM (Pls. XXIII, XXV, XXXIII, XXXII):

The bridles were introduced in India in the *Rāmāyaṇa* age, if not earlier. Macedonian horses employed at the battle of Hydaspes (326 B.C.) were certainly bridled and this was one of the reasons of their being excellent mounted archers (figs. 35, 36, 37, etc.). Fergusson, however, states that the bridles are not seen in the sculptures of Sānchī,[17] but his views are not acceptable.

Describing the bridles of the horse the *Shukranīti* says that the upwards and sideways pointing parts of a bridle were about twelve *angulas* long. There were two inside but very strong pieces attached to it.[18]

The simplest kind of bridle[19] is the hackamore, a halter with the lead strap hitched around the lower jaw.

The essential parts of the bridle are (figs. 42, 43):

A. Headstall

B. Bit, and

C. Reins

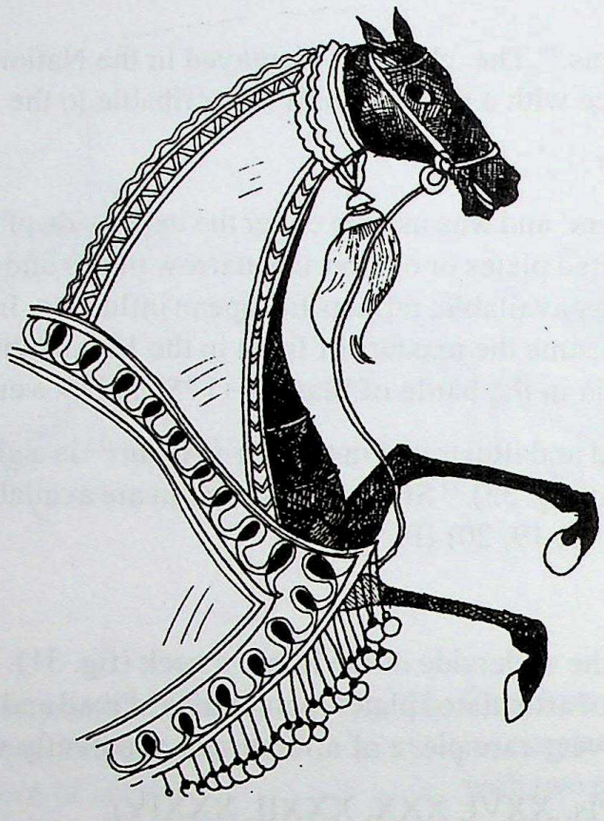


Fig. 35 A bridled horse guarded with a metallic one-piece crinet and an *artak-i-kājem*.

Fig. 36 A horse guarded with a crinet. An *artak-i-kājem* is embellished with floral designs. Drawn from a miniature painting of 18th century A.D.

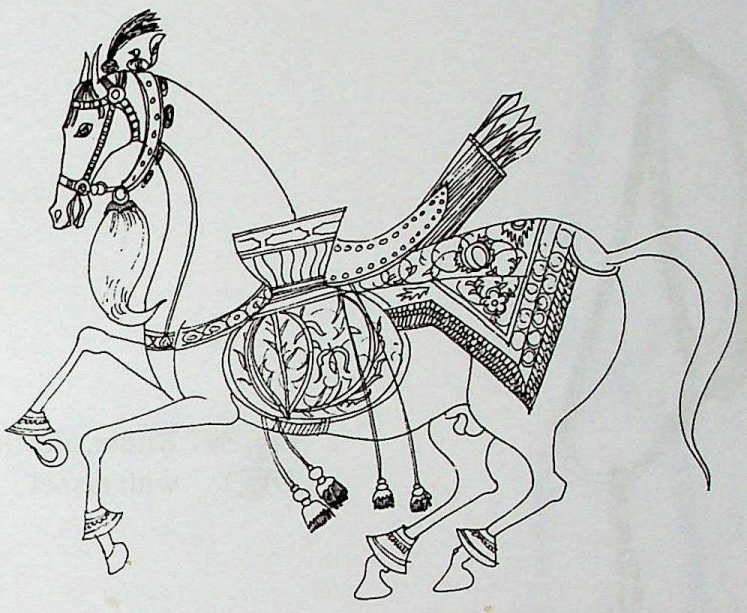


Fig. 37 Tastefully embellished war-horse. Specially noteworthy is the saddle — its front part (pommel) and its back (cantle). Another important thing is the arrangement for the protection of the hoofs. Drawn from a miniature painting of the 18th century A.D.

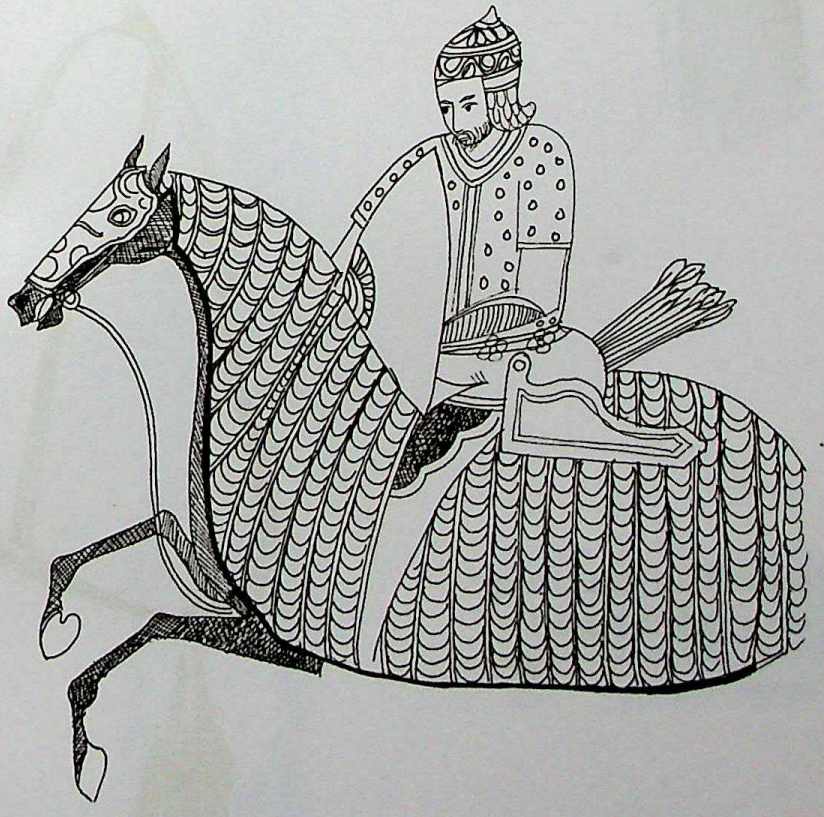


Fig. 38 Bridled horse protected with a chanfron. It is covered all over with an *artak-i-kājem* made of thick cloth upon which metallic scales, arranged in row, were stitched. Drawn from a Mughal miniature painting of Akbar's period, *c.* 1600 A.D.

Fig. 39 Bridle, attached to it is a breast-strap with tassel.

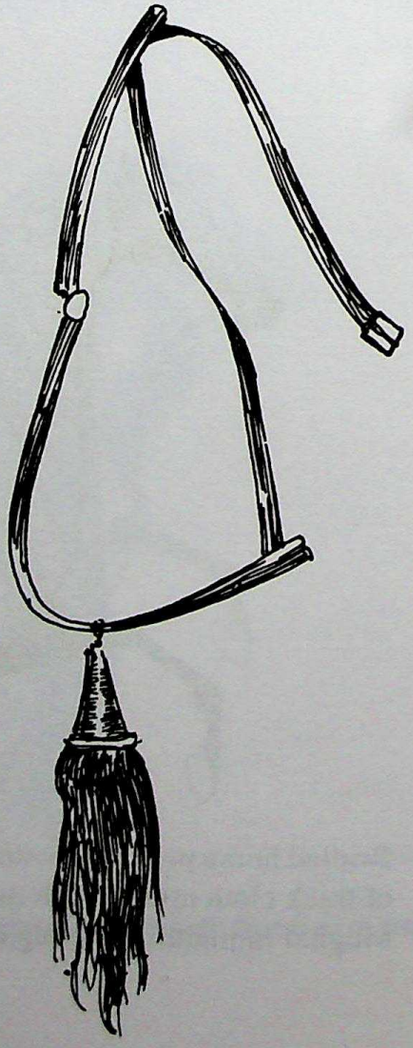


Fig. 40 Bridle, attached to it is a breast-strap to match. It has a yalk-tail tassel.

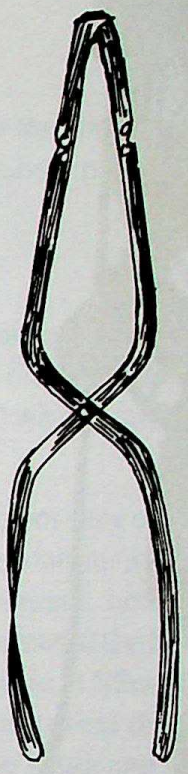


Fig. 41 Bridle, made of leather. Based on a 17th century example.

Fig.42 Bridle, about 1800 A.D. Leather covered with embroidery of coloured silks. Plates and bosses set with semi-precious stones.

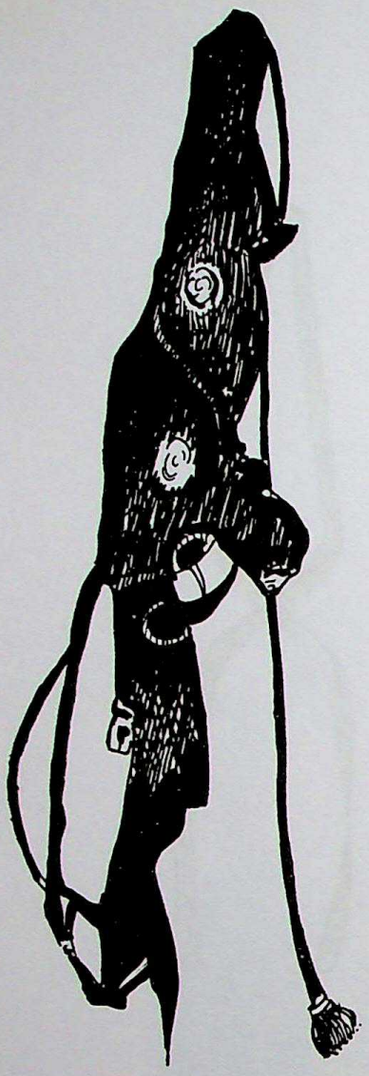


Fig. 43 Bridle, 17th century A.D. All mountings of pierced and gilded metal are set with stones

Fig. 44 Bitted and bridled horse with a *kalaghī* over his head and flywhisk under the neck. The saddle though covered with a saddle-cloth yet reveals its embellishments. Drawn from a miniature painting of the 17th century A.D.

A. HEADSTALL OR SIRDUĀLĪ:

It is an arrangement of straps or cords to hold the bit in the mouth of the horse (fig. 44).[20] It was called *sirduālī* or *paltāh*. The horses painted at Ajantā and later paintings are generally adorned with headstall. (*cf.*, Pl. III)

B. BIT OR AṆĪ:

In Sanskrit it is called *siprā* and in Hindi *aṇī*. It was the metallic piece inside the mouth of the horse. In the *Mahābhārata* it is recorded that "one horse stands on each side of the pole of the chariot, and the two are yoked, guided by a bit (*siprā*) and reins (*rashmi*) while urged by a whip".[21] The horses had gilded trappings (*hemabandha*).

Aelian tells us that the art of managing horses in India was not very common, but was a science confined to a special class. The Indian horses, according to his statement, were directed by a bridle but not hampered by barbed muzzles or curb-bits. This statement, however, is contradicted by Arrian who says that the Indians had a bit but no curb-bit and directed the horses by a spike outside, that is, behind the jaw.[22] Fergusson says that no bits are available at Sānchī[23] but P.C.Chakravarty observes, "A closer examination of the Sānchī sculptures will reveal the presence of both bitted and unbitted horses. The former are specially noticeable in the south and west *toraṇa*, the latter in the north. Where bits were used, the horses have but two bands in their headstall. But when the spike (behind the jaw) is intended, the headstall has three bands; one passing over the nostrils, another beneath and third above the eyes" (*cf.* Pl. V).[24]

In the Ajantā paintings the horses bearing bits inside their mouth have been painted.[25] In Cave No. 17, ascribable to the 4th century A.D., some finely painted horses are wearing bits, which plainly enter the mouth (figs. 16, 17).[26]

During the medieaval period and afterwards the use of bit became very common (fig. 44). The Rājpūts, Mughals, and Marāthās-all used bits. Commenting upon the horse's trappings used by the Indians in the Second Sikh War (1848-49 A.D.), Thackwell, who himself participated in it, says, "very few natives ever became really reconciled to the long seat and powerless bit of the European Dragoons. The usual seat (*i.e.*, saddle) is short, and his bit so severe that it will almost break the horse's jaw. The native horses are so vicious and intactable, that a strong bit is absolutely requisite to enable the rider to control them".[27]

In India, the two principal kinds of bits[28] used are (i) snaffle, and (ii) curb.

(i) Snaffle:

It had a plain or jointed bar in horse's mouth with the rein fastened to the rings at the ends.

(ii) Curb:

It had an arch or plate in the horse's mouth and the vertical bars at the ends.

The curb was much more severe than the snaffle and was always used in war. The reins are fastened, generally, to the lower ends of the bars and the upper ends of the bars are connected by a chain passing back of the jaw.[29]

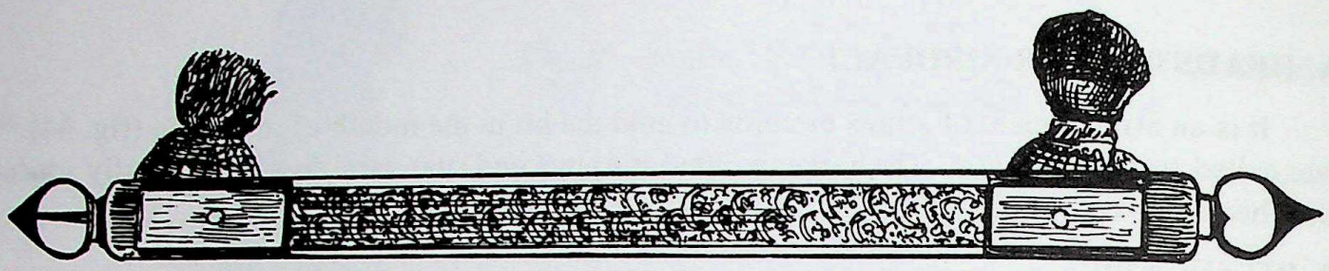


Fig. 45 Breast-strap, profusely ornamented, based on an actual specimen, 17th century A.D.

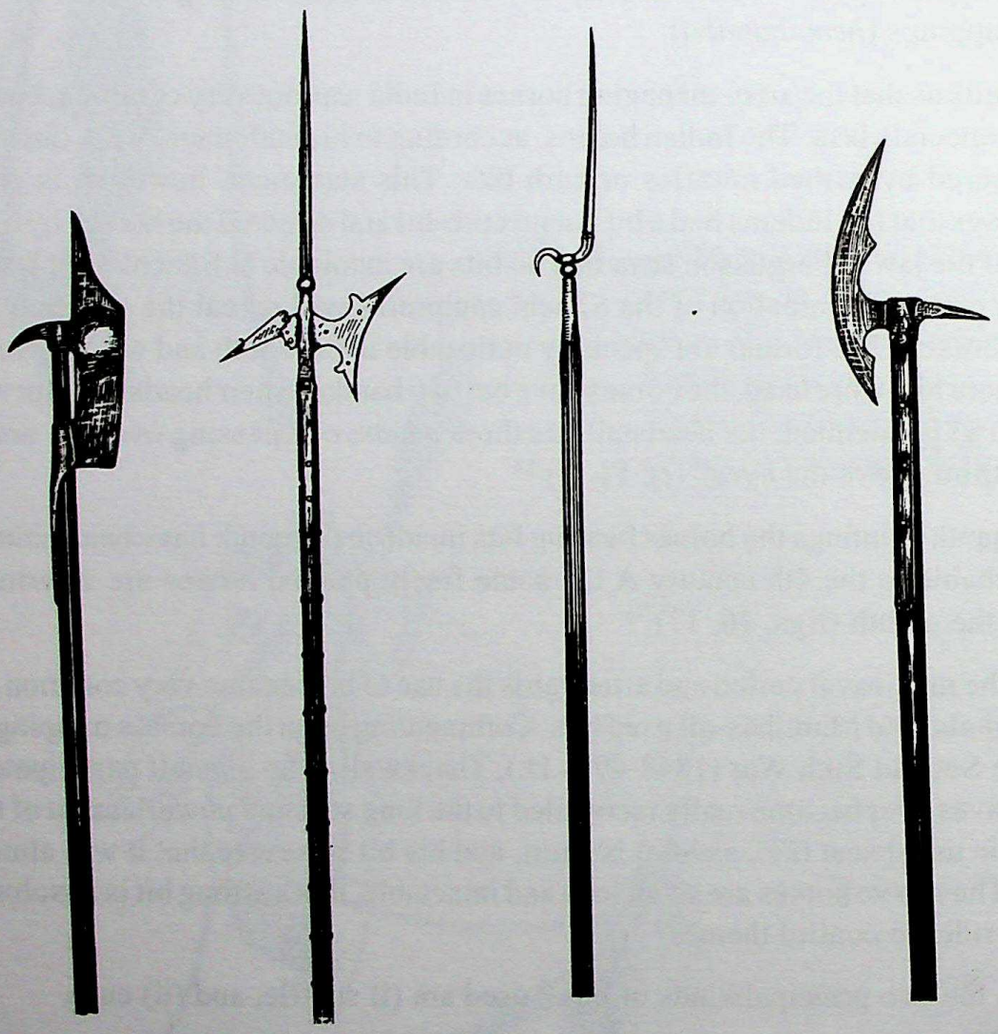


Fig. 46 Battle-axe fitted with a bridle-cutter, 18th century A.D.
Fig. 47 Pole-arm, comprising a pointed spear-head, a *chugā* on one side, a crescent-shaped battle-axe on the other, 18th century A.D.
Fig. 48 Pole-arm, bayonet-head-shaped point, attached to it is bridle-cutter.
Fig. 49 Spear

As the bit is hung from the points betwen the two, very heavy pressure can be brought to bear with it. A number of bits are exhibited in the museums in India having arms collection.

C. REIN OR RASHMI:

The rein was used during the Epic period when it was called *rashmayaḥ* or *rashmi* but the term *abhīkshu* is also used.[30] The reins are seen in the sculptures of Bharhut, Sānchī, Amarāvatī and Nāgārjunkoṇḍā and in the paintings at Ajantā. The slab from Belur, referred to eariler, depicts reins (figs. 38, 39, 40, 42, etc.).

During the Mughal period it was called *inān*. The reins wer generally of leather and sometimes of cotton.[31] Very rarely the entire reins were made of iron. The reins were sometimes protected from being cut by hinged plates.[32] (Pls. VIII, IX)

BRIDLE-CUTTER OR TABAR-ZIN:

It was a sharp hook-shaped blade on the back or side of an axe with which to cut the reins of an enemy.[33] The battle-axes used for this purpose in Rajasthan and Malābār had crescent-shaped blade with a hammer-head opposite and a hook for cutting reins projecting from the side. The wooden handle was reinforced by a steel plate in the middle riveted with brass burrs (figs. 46, 47, 48).

The general name for a battle-axe during the Mughal period was *tabar* and those used for cutting the reins were called *tabar-zin* (literally 'saddle-cutter').

Bābur narrates the dress and equipments of Younger Khān Dādā, the *zamīndār*, whom he met at Tāshkent in July, 1502 A.D. Bābur says, "He (Younger Khān Dādā) was a man of singular manners, a mighty master of the sword and brave. Amongst arms he preferred to trust to the sword. He used to say that of arms there are the *shaspar* (six-flanged mace),[34] the *piyāzī*[35] (rugged mace), the *kistin* (a ball attached by a strap or chain to handle), the *tabar-zin* (saddle-hatchet or bridle-cutter) and the *baltū* (battle-axe)".[36]

FLANCHARD:

It was a plate armour for both the sides of the horse. These were suspended from the saddle on each side and were sometimes curved upwards at the centre to admit of using the spurs.[37] It was not very common in India (Pl. VII).

CRUPPER OF DUMCHĪ:

This was the armour for the hind quarters of a horse. The earliest cruppers were made of leather; mail was next used and finally the plate. The most complete cruppers were made of several steel plates riveted or hinged together (figs. 54, 55)[38] (Pl. III).

POITREL:

It is variously spelt as 'peytral', 'poitrinal', 'poitral' or 'pectoral'. It was an armour for the horse's chest, sometimes the breast-plate. It covered the front and the sides as far back as the saddle. Earlier poitrels were made of leather, later of metal (figs. 31, 54, 55)[39] (Pl. III).

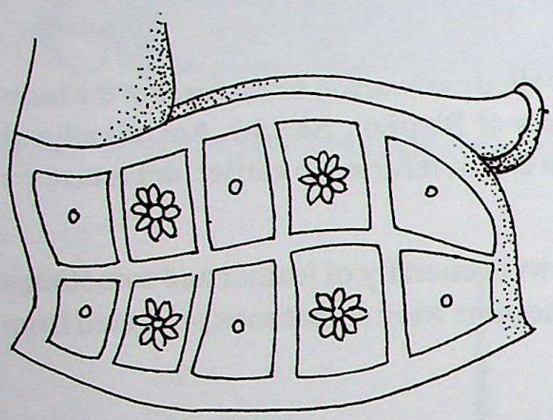


Fig. 50 *Artak-i-kājem* of thick cloth, embroidered with floral design. A crupper (for the protection of the tail-root) is attached.

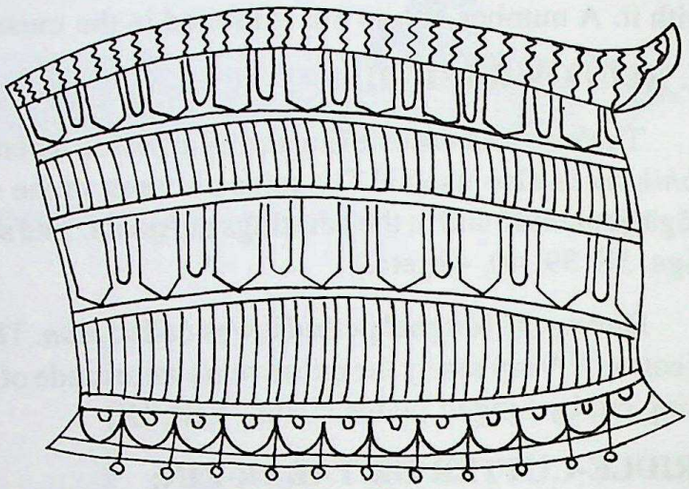


Fig. 51 *Artak-i-kājem* made of lamellar plates of rectangular, dome-shaped and other designs. The upper rim of the armour is extended to cover the tail-root. Based on an actual specimen, 17th century A.D.

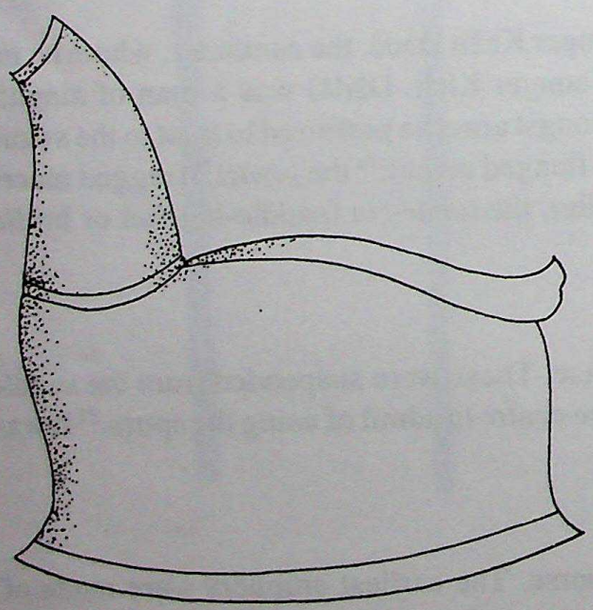


Fig. 52 *Artak-i-kājem*, armour for the body of the horse. It protected from the shoulders to the tail and from the back down to the chest. The extended upper part served as a crupper (tail-root guard). It was a quilted covering.

Fig. 53 Both the rider and the animal are fully guarded. The warrior uses a helmet, a body armour of chain mail and a pair of trousers of the same material. The horse is protected with a chanfron, *artak-i-kājem* and girth-band.

Large bosses were usually fixed on the poitrel to deflect lance thrusts. These were called "glancing knobs".[40]

TAIL-PIECE OR BALABANDHA:

It is also called 'tail-guard' or 'tail-band'. These are mentioned in the *Mahābhārata*.[41] One passage unites "Tail-bands, plumes, breast harness, bits, ornaments of silver, brass and gold".[42] In Sanskrit it is called *balabandha*.

The tail-piece was sometimes an arched plate riveted to the crupper of horse armour to protect the root of the tail (fig. 29). It was sometimes like a tubular plate. The plate was lined with leather or wadded with cotton to prevent chafing (figs. 54, 55).[43]

SPUR, PRATODA OR MAHMEZ:

Spur[44] is a prickling instrument with point or rowel worn on horsemans wheel. The earliest form was the 'prick spur' or one having a single straight point. Later it developed into a rowel i.e., 'a toothed wheel'. In a few cases the line (or blade) of the prick spur was so long that it even proved fatal to the horse; to avoid the injury the tip was made less sharp or even blunt. Very rarely a stop arrangement was made in the long, straight, pointed spurs so that they do not penetrate deep into the body of the horse.[45]

WHIP OR KASHĀ:

The horse is driven by a whip. In the *Mahābhārata* it is often described as gilded. It was fastened to the wrist of the rider, leaving his hand free.[46] During the *Mahābhārata* period the chariot horse was driven by a goad and the horse of the cavaliers was driven by a whip. During the medieval period it was called *koḍā* and was made of a wooden handle covered with leather to which was tied a long twisted rope of sinew or cotton or leather. This has invariably been used by all the horse-riders, in peace and in war, throughout.

HORSE-SHOE OR NĀL:

In the Mughal miniature paintings a horse in action is generally shown with one of the fore-feet turned backwards so as to expose the horse-shoe.[47] The shape is not different from those used today. It was of iron. The *Āin-i-Akbarī*[48] tells us that the *nāls* were changed twice a year (fig. 37).

During the Peshwās the art of shoeing the horse was called *nālabandī* and under this scheme a small advance of pay was made to horse-soldiers on engaging them or on dispatching them on any service.[49]

FLYWHISK OR CHĀMAR OR CHAURĪ:

It was a horse -tail standard used in India as an auspicious thing.[50] It was a sign of dignity and a privilege of princes and nobles.[51] Its handle, mostly of silver, was generally well decorated and the tufts of the horse hair were very thick. The attendant carrying the flywhisk stood close to the king and waved it gently above the king's head. It was used by the ladies too.[52]

During the Mughal period it was called *tumān tugh* (literally 'horse-tail standard') and was sometimes bestowed upon the favourites of the emperors. In the eleventh regnal year (1616 A.D.) Jahāngīr conferred upon Itimā-du-daullā a *tumān tugh* and also increased his *mansab*.[53] This practice was popular throughout the east.[54]

Fig. 54 Fully armoured warriors and horses engaged in a battle. The warriors are equipped with helmet, body armour, arm-guards, leg-guards and various weapons like bow and arrow, spear, sword, dagger, club and the like. The horses are guarded with crinet, *artak-i-kājem* and crupper. Drawn from the illustrated manuscript of the *Bābur-nāmā*, Mughal, 1598 A.D. (National Museum, New Delhi Collection)

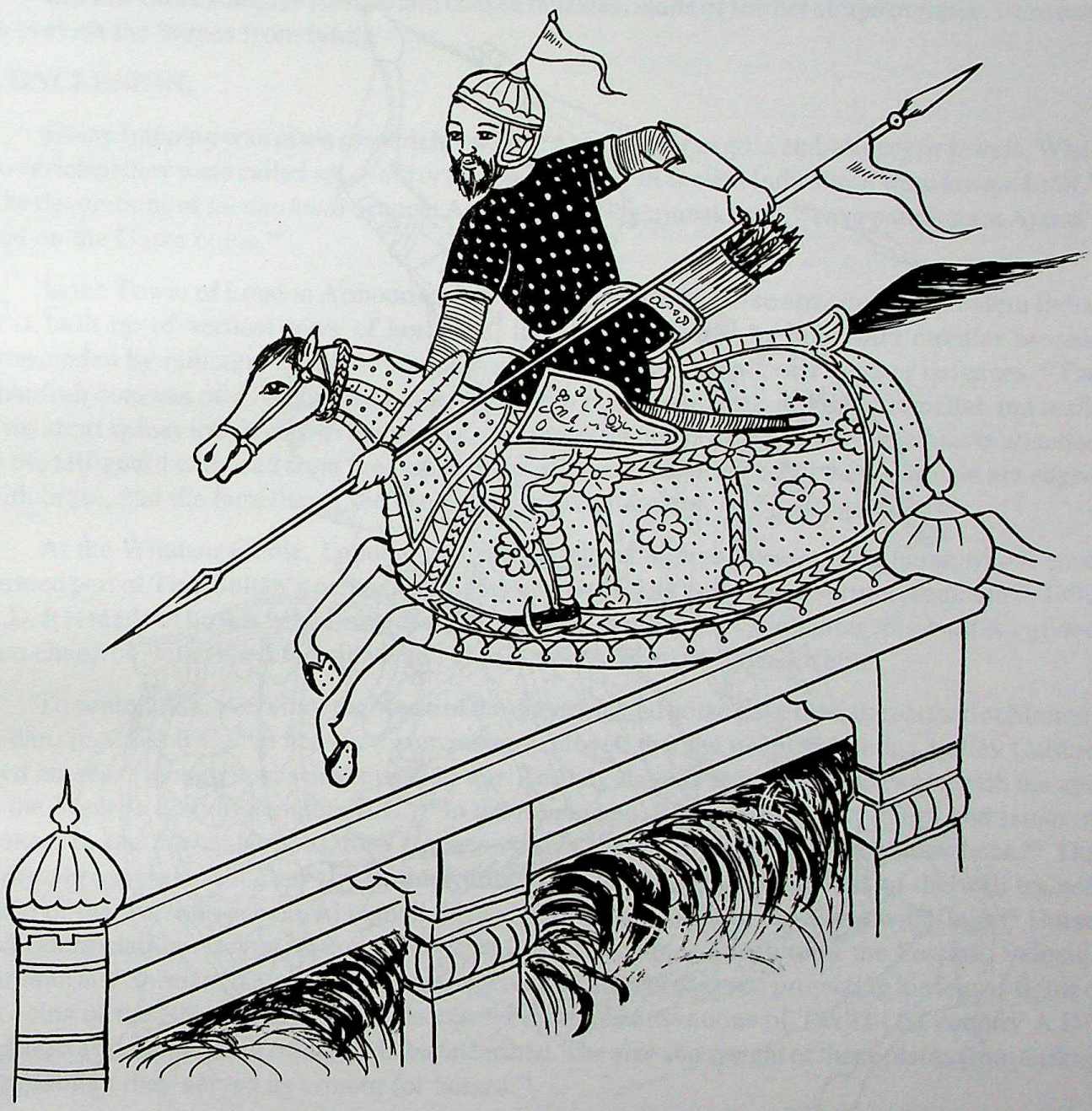


Fig. 55 Armoured cavalier, clad with a ribbed helmet, body armour, arm-guards and leg-guards, carries a spear, sword, quiver, bow and arrows. The horse is protected with a crinet, *artak-i-kājem* and crupper. Based on a miniature painting of 17th century A.D.

Fig. 56 The armoured warrior riding an armoured horse. The animal is protected with a chanfron, crinet, *artak-i-kājem* and a crupper. The *artak-i-kājem* is tastefully decorated. Based on a miniature painting of the 17th century A.D.

MUZZLES:

In a few rare examples pierced and chased muzzles, made of leather straps or ropes, were used to prevent the horses from biting.

CONCLUSION:

Horse trapping was often most richly adorned with silver or gold embroidery or jewels. When so enriched they were called *sāz-i-tilā* or *sāz-i-marassā*.[55] In ancient India these were *lavaṇa kalāī*.[56] The decorations of *lavaṇa kalāī* occur at Amarāvatī,[57] Nāgārjunakoṇḍā,[58] cave paintings at Ajantā[59] and on the Gupta coins.[60]

In the Tower of London Armouries, London, is displayed a horse armour from Western India. It is built up of vertical rows of horizontal lamellae connected by mail with circular bosses, surrounded by radiating lamellar, on either side of the neck, breast, and crupper defences. "The chanfron consists of a rigid central face-plate, with nose-and-cheek-pieces of lamellar and mail. Two short spines are riveted to the base of the face-plate, and a tail of black horse hair is attached to the tail-guard extended from the centre of the crupper. The bosses and the face-plate are edged with brass, and the lamellae of the cheek-pieces are alternately of brass and iron."[61]

At the Windsor Castle, London, is preserved the complete harness for a horse which once formed part of Tīpū Sultān's personal armoury and was taken away from Serirangapatnam in 1799 A.D. It is made of brown velvet, studded with a pattern of gilt nails. Completing this bard is a gilded iron chanfron with fluted face-plate and cheek-pieces of studded black velvet.

To summarise, ever since the bones of the domesticated horse have been unrearthed at Mohen-jo-dāro (*c.* 2500 B.C.)[62] it has been convincingly proved that the people of Indus Valley Culture bred horses,[63] though it was never used in war. The hey-day of the war-horse dawned with the age of the *Rigveda* (2nd millennium B.C.)[64] In the *Rāmāyaṇa*, Rāma is an expert rider[65] and tamer of horses. In the *Mahābhārata* Droṇa teaches Arjuna the art of fighting on the horseback.[66] The *Virāṭaparva* refers to the cavalry of the Kurus[67] and the *Udyogaparva* speaks of the well trained steed of the warriors accoutred in mail decked with ornaments and furnished with flags.[68] Horse and riders clad in mail or plate armour were from early times a feature of the Persian, Selucid, Pārthian and Sarmātian armies.[69] A horseman with an armoured apron protecting his legs is figured on coins of the Shaka Satrap Kharahostes.[70] From the excavations of Taxilā (1st century A.D.) eighteen armour plates of iron have been unearthed. The size and weight of these plates from Sirkap suggest that they served as armour for horses.[71]

It is possible that horse armour of an almost standard pattern had been developed in the Islamic world by the 16th century A.D. and unless marks and dates were put on them it would be difficult to distinguish an Indian or Persian one from a Turkish one.

References

1. W. Egerton, *Indian and Oriental Armour* (1896), reprinted (London, 1968), p. 125.

2. G.C.Stone, A *Glossary of the Construction, Decoration and Use of Arms and Armor* (New York, 1961), p.117, figs. 213 and 214.

3. Angellucci in his 'Preface' to the *Catalogue of Rurin Armoury* makes a distinction between the 'chanfron' (*'tesera'*) and the 'frontlet' (or 'frontale').

4. The Indian chanfrons are quite similar to those used in Turkey, Persia or Europe differing mainly in decoration and in a few other minor details.

5. G.C.Stone, *op.cit.*, p. 94.

6. S.P. Verma, *Art and Material Culture in the Paintings of Akbar's Court* (New Delhi, 1978), pp. 99-101, pl. LXVI, figs. 1 to 8.

7. W. Egerton, *op.cit.*, opposite p. 23, plate I, fig.11. This is just like the horse's head having two raised ears, complete frontlet with two round slits being the provision for the eyes. A strap is attached to it which went round the back neck instead of the jaws.

8. S.P.Verma, *op. cit.*, p.100, pl. LXVI, figs. 1-2.

9. W.Egerton, *op. cit.*, p. 20.

10. *Āin-i-Akbarī*, English edition, reprinted (New Delhi, 1965), pl. XIV, fig. 60.

11. Percival Spear, *Master of Bengal, Clive and His India* (London, 1975), p. 89.

12. *Āin-i-Akbarī, Āin*, 35 (The Arsenals), No. 75 in the list. Its price at that time varied from 1 rupee to 1 *muhar*.

13. W.Egerton, *op. cit.*, pl. I, No. 3.

14. G.C. Stone, *op.cit.*, p. 195, fig. 123.

15. *Mahābhārata*, 10.9.12, *cf., ibid.*, VIII. 27.33; VII. 163.22.

16. E.W.Hopkins, *The Social and Military Position of the Ruling Caste in Ancient India*, reprinted (Varanasi, 1972), p. 202.

17. Fergusson, *Tree and Serpent Worship*, p. 134.

18. *Shukranīti*, IV. 7.172;
खलीनस्योड्र्धखण्डौ द्वौ पार्श्वगो द्वादशांगुलौ ।
तत्पार्श्वान्तर्गतोभ्यास्तु सुदृढ़ाभ्याम् तथैव च ॥

19. In Sanskrit it is called *khalina*.

20. 'Cavesson' was also a kind of headstall with a nose-band having rings for the attachment of a rein or cord by which the trainer on foot directed the horse in circles around him, *vide*, G.C.Stone, *op. cit.*, p. 167, fig. 211.

21. E.W.Hopkins, *op. cit.*, p. 179.

22. Arrian, *Indika*, Frag. XVI.

23. Fergusson, *op. cit.*, p. 134.

24. P.C. Chakravarty, *The Art of War in Ancient India* (Dacca, 1941), p. 40.

25. G.Yazdani, *Ajantā*, Part I, p. 19: *Indian Antiquary* (1930), p. 170; Lady Herringham, *Ajantā Frescoes*, pl. 57.

26. However, in the procession of Cave No. 1 at Ajantā, the horses are represented as without bits. Similarly, on a large slab from Belur, now displayed in the Museum at Bangalore, there are two horses having the reins going plainly to the back of the jaw and not to the mouth. The stone is ascribed to *c.*850 A.D. Probably

two different modes of guiding the horse, with and without bit, continued side by side.

27. E. Josheph Thackwell, *Narrative of the Second Sikh War*, reprinted (Delhi, 1978), p. 28.

28. These two types have, by and large, been universally used.

29. G.C.Stone, *op.cit.*, p. 115, figs. 151 to 153.

30. *Mahābhārata*, VIII. 32.19; VII. 48.29.

31. G.C.Stone, *op.cit.*, p. 599, fig. 766.

32. The reins denote generally the two leather straps attached to the bit on each side of the mouth of the horse.

33. G.C.Stone, *op. cit.*, p. 149, fig. 101.

34. These were later called *gurz* or the mace having flanged blades.

35. The head was shaped like an onion (*piyāz*) hence the name. It was also called *gadā*.

36. *Bābur-nāmā*, English tr. reprinted vols. I and II (New Delhi, 1979), p. 160; folio No. 103.

37. G.C. Stone, *op. cit.*, p. 230; C. Ffoulkes, *Armour and Weapons* (London, 1909), p. 90, fig. 40.

38. G.C. Stone, *op. cit.*, p. 195, fig. 245.

39. *Ibid.*, p. 496, fig. 735.

40. C. Ffoulkes, *op. cit.*, p. 90, fig. 40. Sometimes it was hinged in three pieces.

41. *Mahābharata*, VIII. 34.30.

42. *Ibid.*, VIII. 24.63, बालबन्ध उरश्छद, खलीन'' In VIII. 19.43, we find, ''प्रकीर्णक''

43. C.Ffoulkes, *op.cit.*, p. 90, fig. 40.

44. In Sanskrit it is called *pratoda* (literally 'to prick') and in Urdu *mahéz* (literally 'to inspire'). The spur is used in goading the horse.

45. When the horses were covered with plate armour the spurs had to have very long shanks in order to reach the animal under the flanchards. These were then called 'arming spurs', *vide* G.C. Stone, *op. cit.*, p. 18.

46. "बद्धा सादिभुजाग्रेषु सुर्वशाविक्रताः कशाः" along with berrylhand *aṅkushas* (goads) for the elephants in the *Mahābhārata*, VIII. 58. 30. The chariot-horse was pricked with a *pratoda* (spur), the elephant with a *toltra* and an *aṅkusha*, and the cavalry-horse was driven by a *kasha* (whip); *ibid.*, 134.6. The whip has perhaps not undergone any change during these hundreds of years.

47. S.P.Verma, *op.cit.*, p. 105.

48. "*Nāls* are renewed twice a year. Formerly eight *dāms* were given for a whole set, but now ten," *Āin-i-Akbarī*, tr. Blochmann, vol. I, p. 145.

49. S.N.Sen, *Military Systems of the Marāthās* (1958), p.69.

50. In Sanskrit these are called *chāmar* or *chaurī* and the attendants carrying them are called *chāmardhārī* (*chamardhāriṇī* in case of lady attendants) or *chaurī dhārī* (*chaurī dhāriṇī*, if a lady) *i.e.*, flywhisk-bearers. They have religious significance also when they are waved before the Buddha or the relics or coffin of the Buddha in the Gāndhāra art (*vide*, John Marshall, *The Buddhist Art of Gāndhāra* (Cambridge, 1960), pl. 34, fig.55 and pl. 39, fig. 62) or in the Amarāvatī sculptures (*cf.*, C. Sivaramamurti, *Amarāvatī Sculptures in the Madras Government Museum*, (Bulletin of the Madras Government Museum, New Series, 1956), vol. IV, pl. XXV.2.

51. The sculptures of Sānchī (*cf.*, Heinrich Zimmer, *The Art of Indian Asia: Its Mythology and Transformations* (New York, 1964), vol. 2, pl. 31-d; and Nāgārjunakoṇḍā (*cf.*, K. Krishna Murthy, *Nāgārjunakoṇḍā : A Cultural Study* (New Delhi, *n.d.*), p. 732, depict flywhisks.

52. Sometimes the whisk was made of yak-tails imported from the sub-Himālayan regions.

53. *Tuzuk-i-Jahāngīrī* (tr.), *op.cit.*, p.320.

54. In Turkey the flywhisk was sometimes sent by subordinates to insure obedience. The number of tails indicated the rank of the bearer: the more the tails, the higher the rank, *vide*, G.C.Stone, *op. cit.*, p. 155.

55. W. Irvine, *The Army of the Indian Moghuls*, reprinted (Delhi, 1962), p. 72.

56. V.S.Agrawala, "A Note on the *Lavaṇa Kalāi*", *Indian Culture* (1945-47), vol. XII, Nos. 1-4, pp. 233-35, is of the opinion that this word *lavaṇa kalāi* is perhaps originally Sassanian and borrowed in a corrupt form into Sanskrit.

57. Fergusson, *op. cit.*, pl. LXVII.

58. K.Krishna Murthy, *op. cit.*, pl. XII.2.

59. *Journal of Indian Art and Industries*, Nos. 61-64, p. 12.

60. John Allan, *Gupta Coins*, pl. IX, 17: XII. 13.14.

61. H.R.Robinson, *Oriental Armour* (London, 1967), p. 117.

62. John Marshall and Others, *Mohenjo-daro and the Indus Civilization* (London, 1953), vol. II, p. 653, pl. CLXII, fig. 9.

63. Stuart Piggot, *Prehistoric India* (Harmondsworth, 1950), p. 157; Mortimer Wheeler, *The Indus Civilization* (Cambridge, 1960), 2nd ed., vol. II, p. 65.

64. *Rigveda*, I. 160.9; I.163.2, IX. 100.4, etc. The Vedic cavalrymen made use of the lance and the sword as their chief weapons of offence. The Maruts invariably make use of these weapons; see for example *Rigveda*, I. 31.1; 37.2; 64.11;85.4;88.1.3; 166.4; 168.3; V.54.11; 57.2.6; VII 2.11.

65. Vālmīki, *Rāmāyaṇa, Ayodhyā - kāṇda*, 1.28.

66. *Mahābhārata*, I. 123.7.

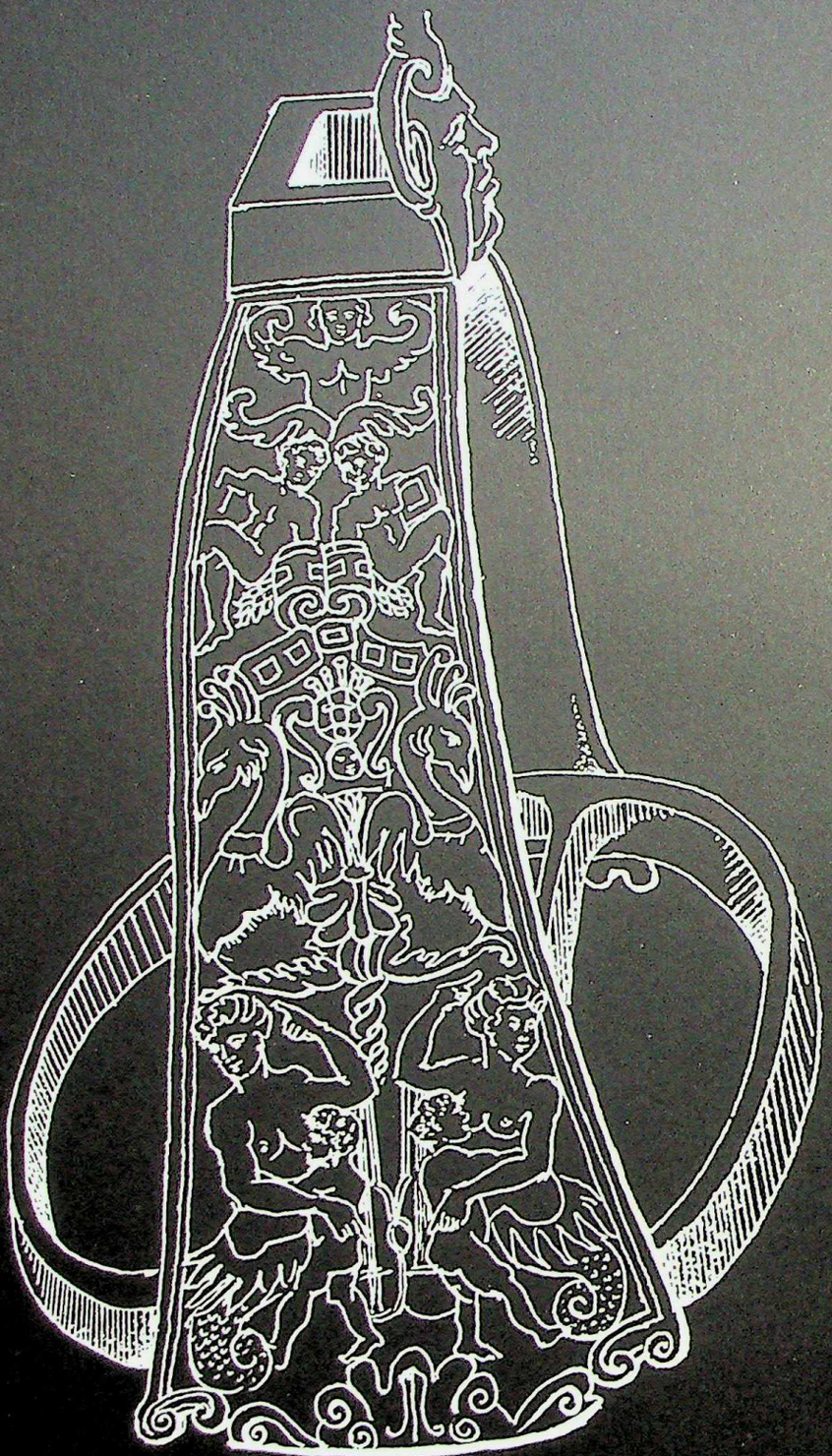
67. *Ibid.*, 4.51.2.

68. *Ibid.*, 5.152.16.

69. John Marshall, *Taxilā*, vol.II (Minor Antiquities), reprinted (Varanasi, 1975), p. 549.

70. *British Museum Catalogue of Greek and Scythic Coins of Bactria and India*, pl. XXIII.6.

71. These plates (10 x 8.5 x .08 inches thick from Sirkap) are curved to fit the body and are of different sizes and patterns; some are provided with hinges or pierced with small holes for lancing. It is not possible to determine for certain if they were riveted; *cf.*, John Marshall, *op.cit.*, p. 549.



4
Saddle and Stirrup

INTRODUCTION:

Saddles and stirrups form an integral part of the horse harness (fig. 57) and, as a rule, should have been narrated in the previous chapter. Owing to their special role these two items are being discussed separately in an independent chapter. When was the first saddle invented or the first stirrup used in India, we know not. The stirrups were not known in the pre-and-protohistoric times, these were still unknown to the cavaliers of the *Rāmāyaṇa* and the *Mahābhārata* age. No stirrups were known to the Buddhist *Nikāyas*. They do not appear even in the days of Alexander, the Great (326 B.C.), who himself was a splendid horseman and had an efficient cavalry and a body of mounted archers in his army. In fact, the stirrups are not known anywhere in the world until we find them first in India among the sculptures of Sānchī, Bhājā, Pītalkhorā and Mathurā. The saddle appears for the first time in the Epics. The lack of stirrup and saddle never bothered the ancient Indian who developed their cavalry to suit the needs of their day (fig.58).

SADDLE: ORIGIN AND DEVELOPMENT (Pls. XXXIII, XXXIV, XXXV, XXXVI)

It has variously been called *palyaṇa* or *paryaṇa* in Sanskrit, *kāṭhī* in Hindi and *zīn*[1] or *chārjāmā* or *khogir* in Persian. A number of words in the *Mahābhārata* like *pīṭhaka*,[2] *pīṭhamarda*,[3] *khalina*,[4] *ashvāstara*,[5] *paristoma*,[6] *rānkava*[7] have been used for the covering of the horseback. Which or how many of these terms can be used for "saddle" is not very clear. One hesitates to take *pīṭhaka* as "saddle" (fig. 59). The *pīṭhamarda* does not necessarily imply a saddle, as the seat may be blanket (*kambala* or *kambola*). The *ashvāstara, paristoma* and *rānkava* were all "spread over the horses"[8] and thus were probably some kind of blankets which might have served as saddles (fig. 60). A number of such blankets were found on the battlefield. E.W.Hopkins rightly remarks, "We might well regard *pīṭha* as saddle, were it not for the negative evidence or lacks of such things in descriptions teeming with everything wearable by horse or driver".[9]

Saddle is clearly visible on some of the horses figured at Sānchī[10] and Bharhut.[11] In the procession of the 1st cave of Ajantā paintings the horses are provided with saddles.[12] These are similar to the later *chārjāmās* with short stirrups. There are leather straps round the throat and across the forehead and embroidered bands across the nose and the muzzle.[13]

The saddle is also represented on the Ashvamédha type of Kumārgupta I's coin (5th century A.D.). The Kurram Plate of the Pallava King Paraméshvaramana I describes the saddles studded with precious stones.[14]

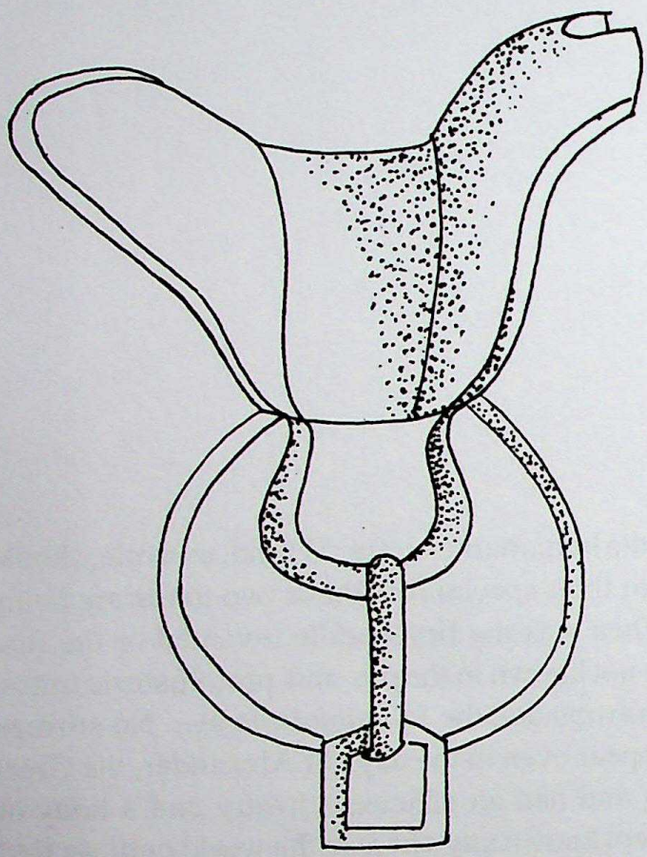


Fig. 57 Saddle made of leather and covered with cloth. The front part (pommel) and the rear (cantle) are visible. Metallic stirrups (*rakāb*) has a wide foot-rest. Based on an actual specimen, 17th century A.D.

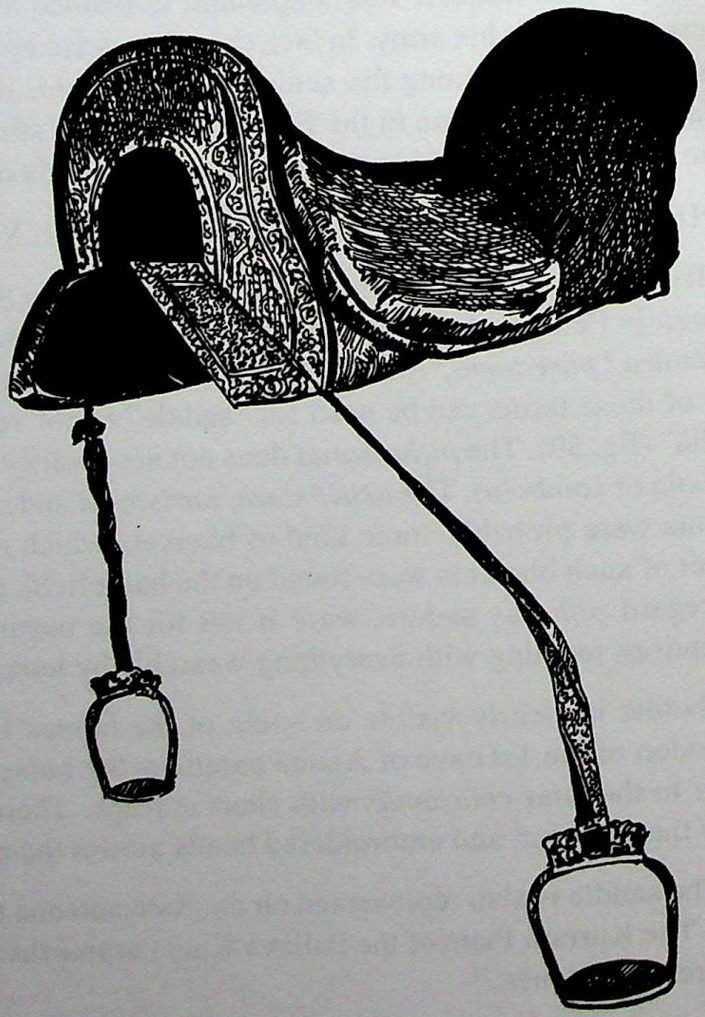


Fig. 58 Saddle, the wooden frame is covered with carved, pierced and gilded steel. The front part (pommel) and the rear (cantle) are raised high. A pair of stirrups are attached with leather strap. Based on an actual example, 17th century A.D.

One of the reasons of the Turkish victory[15] during the 12th century A.D. was the mounted archery.[16] The Turks used the bow and other weapons from the saddle and while moving.[17] This gave them an added advantage over the heavy and slow moving Rājpūt armies.

Hazrat Amīr Khusrau in a metapherical manner has described the South Indian conquest of Alāuddīn Khaljī. He says, "But now they (the Hindus) saw the Rāi break his own 'stirrup' and the Day of Reckoning covered them like a 'saddle-cloth'. The world appeared to them contracted like the 'bow of a saddle' : the wave of blood rose above the 'saddle' and they had no place to dry their feet. So they turned away their 'bridles' from their infidel allies, sought safety in submission to the Mussalmāns, and tried to strengthen themselves by hanging to the 'saddle-trap' of the State".[18]

On the 17th July, 1501 A.D., Bābur had a horse race with Kāsim Bég and Qambar Alī. Bābur writes, "My horse was leading when I, thinking to look at their behind, twisted myself round; the girth may have slackened for my saddle turned and I was thrown on my head to the ground".[19] In July, 1502 A.D., Bābur saw that the Mughal horses were adorned in a unique fashion and the saddles were made of green shagreen-leather.[20] There were many occasions when Bābur and his soldiers had to spend the whole night on the saddle (fig. 62).[21] On the 15th May, 1519 A.D. (Sunday, first *Jumāda*), Khwājā Muhammad Alī brought an excellent saddled horse as an offering to Bābur. Another saddled horse was presented to Bābur by Qāsim Bég on the 2nd September, 1519 A.D. (Saturday, the 8th of *Ramzān*, A.H. 925).[22]

After the victory of Bābur at the battle of Pānīpat a large party was held in the pillared-porch of the domed building of Ibrāhīm Lodī. At this party there were bestowed upon Humāyūn a *chār-qāb*[23] a sword-belt, a *tipūchāq* horse with saddle mounted in gold.[24] Interestingly Bābur refers to the 'saddle-bags' (*khurzīn*). Describing about his camp at Qandhār in 1507 A.D., Bābur writes, "(There were) excellent *tipūchāqs*, strings and strings of he-camels, she-camels, and mules bearing saddle-bags of silken stuffs and cloth-tents of scarlet cloth and velvet (fig. 63)."[25]

In A.H. 946 (1539 A.D.) Shér Khān defeated Humāyūn the second time and Humāyūn had to flee. As an exile, says Jouher, "after a number of marches the royal army arrived at Kālpī where the governor, the son of Kāsim Kerāchy, had prepared a number of presents for the king but by the shameful advice of his father, who commanded one of the divisions of the army, only offered a few triffling articles. On hearing of this circumstance His Majesty would not accept any of them but an "embroidered saddle", which he said he would take for his brother Kāmrān".[26]

In A.H. 948 (1541 A.D.) Humāyun reached Bhakhhar where Mirzā Yādgar[27] invited him to an entertainment and there presented him with a handsome horse having a bridle and the saddle mounted with silver together with other items.[28]

Abul Fazl says that in the *khāsa* stable forty special horses were reserved for Akbar (fig. 65). One saddle was allowed for every two horses, in the following manner "for the first and twenty-first; for the second and twenty-second, and so on. If the first horse is sent out of the stable, the saddle remains at its place, and what was the second horse becomes first, and the second saddle falls to the third horse, and so on to the end. If a horse out of the middle leaves, its saddle is given to the preceding horse".[29] The saddle-holder was called *ẓīndār* and he received 160 *dāms* annually.[30]

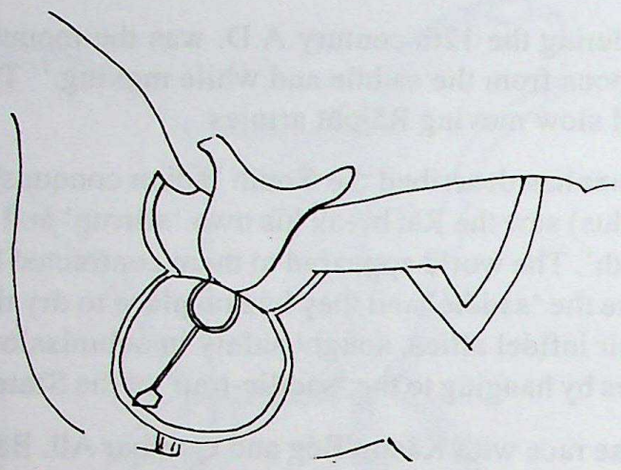


Fig. 59 Saddle, the pommel and cantle are raised high. Stirrups are attached. Drawn from a miniature painting of 17th century A.D.

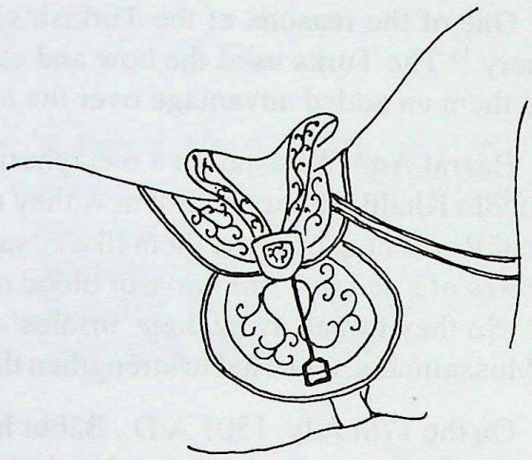


Fig. 60 Saddle with its pommel and cantle raised high. Stirrups are attached. The saddle is tastefully decorated. The *artak*, on which the saddle rests, is beautifully embroidered. Drawn from a miniature painting of early 18th century A.D.

Fig. 61 Fully armoured cavalier riding a fully armoured horse. The knight is wearing a helmet, an armour coat, arm-guards, leg-guards, knee-caps and has placed his feet in the stirrups. The animal is guarded with a chanfron, a crinet, *artak-i-kājem* and crupper. Drawn from a miniature painting of 17th century A.D.

Fig. 62 Fully armoured warrior riding a fully armoured horse. The warrior is wearing a helmet, an armour coat, arm-guards and leg-guards. The horse is wearing a complete chanfron, a plain crinet, an ornamented *artak-i-kājem* with a crupper and a saddle with stirrups. Based on a Mughal miniature painting of *c* 1600 A.D.

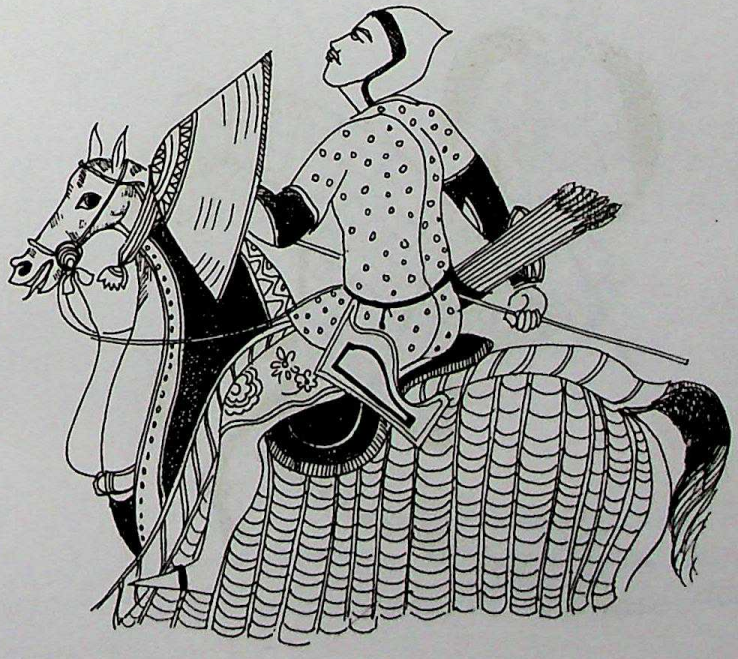


Fig. 63 The horse is protected with a crinet, a saddle with its stirrups and an *artak-i-kājem* with its crupper. The body armour of the horse is made of metallic scales. The knight is well guarded with a helmet, an armour coat, arm-guards, a spear, a quiver filled with arrows and a bow-case. Drawn from a miniature painting of 17th century A.D.

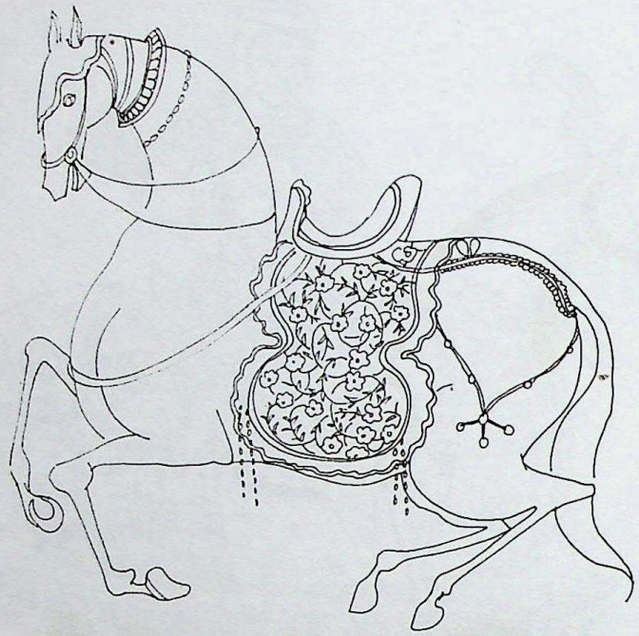


Fig. 64 A war-horse, bitted and bridled, guarded with a demi-chanfron and an ornamented saddle. Drawn from a miniature painting of the 17th century A.D.

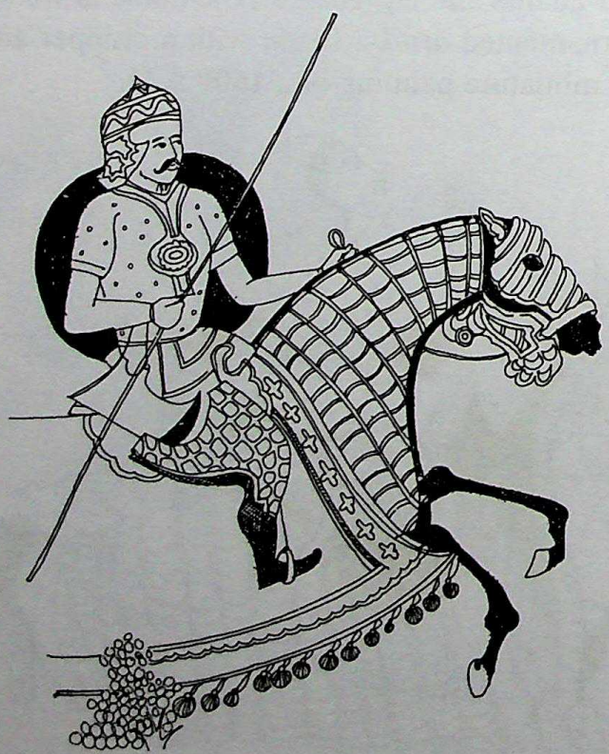


Fig. 65 The bitted and bridled horse is very well protected with chanfron and *artak-i-kājem*, both made of lamellar plates. The foot is resting in stirrup. Drawn from a miniature painting of 17th century A.D.

On the 24th October, 1605 A.D. (A.H. 1014), Jahāngīr ascended the Mughal throne in the capital of Agra and on that occasion he made several presents. To Qutubuddīn Khān Kokā, one of the generals, was given a jewelled sword and one of Jahāngīr's private horses with a jewelled saddle.[31] On the eighth regnal year *i.e.*, 1614 A.D. (*Muharram*, A.H. 1022) Yādgār Alī Khān, the ambassador of the ruler of Iran, presented many rare articles to Jahāngīr. Amongst other, twelve Iraq and Arab horses that had been brought in a ship, and the jewelled saddles of Frank workmanship[32] were specially admired by the Mughal Emperor.[33] The same year the Emperor bestowed on Yādgār Alī a horse with a jewelled saddle.[34]

On Thursday, *Mubārak-shāmba*, the 27th, A.H. 1026 (1617 A.D) Nūr Jahān prepared a feast of victory for Shāh Jahān and conferred on him many jewels, etc., together with two horses, one of which had a jewelled saddle.[35]

Sāqī Mustād Khān records that on the 6th July, 1661 A.D., Emperor Aurangzéb was weighed on his 45th lunar birthday and he gave to the Persian envoy several items including an enamelled dagger with a pearl strap, an elephant with gold litter and silver trappings, a gold embroidered housing and a horse with gold litter and silver trappings, a gold embroidered housing and a horse with gold saddle and bridle.[36] On Friday, the 27th December, 1667 A.D., Rājā Rām Singh, the reputed noble of the court, was deputed to crush the revolt in Bengal. He was given a strap and a horse with gold trappings.[37]

On Thursday, the 12th March, 1668 A.D. (8th *Shawwāl*, A.H. 1078), Abdullāh Khān, the expelled king of Kāshghar, reached Delhi. Aurangzéb welcomed him and presented him with 11 lakhs of ruppees and 18 horses with trappings of jewel, gold and silver, gold saddles and gold embroidered horse-cloth.[38] On Monday, the 16th December, 1672 A.D., Muhammad Sultān was married to Dostdār Bānu Bégam, the daughter of Murād Bakhsh, and was presented with may items including a horse with a jewelled saddle.[39]

On Sunday, the 15th October, 1676 A.D. (17th *Shaban*, A.H. 1086), Muhammad Muazzam was sent on the Kabul expedition with a huge army, artillery, treasure and material and given swords and jewelled *sāz* (trappings), three Arabī, Iraqī and Turkī horses with jewelled trappings and wrought saddles. An additional special horse named 'Koh-i-Razm' (Rock in Battle) with gold saddle was given for the personal use of the Prince.[40]

On Friday, the 15th February, 1689 A.D. (5th *Jamad*, A.H. 1099), Sambhājī, the son of Shivājī, was arrested and presented before Aurangzéb. The captor of Shambhājī was rewarded with *dhūp* (sword), with jewelled *pardala* and a horse with jewelled saddle and *sāz* [41] (*cf.* Pls. XVII).

PARTS:

The frame of the saddle is called the 'tree', the front the 'pommel'[42] (*qarbus*) and back the 'cantle' (*qash*).[43] In India saddles varied greatly in size and shape. In certain cases *qarbus* and *qash* were covered with steel plates which were decorated[44] but usually the saddles were made of wood covered with leather (fig. 58).

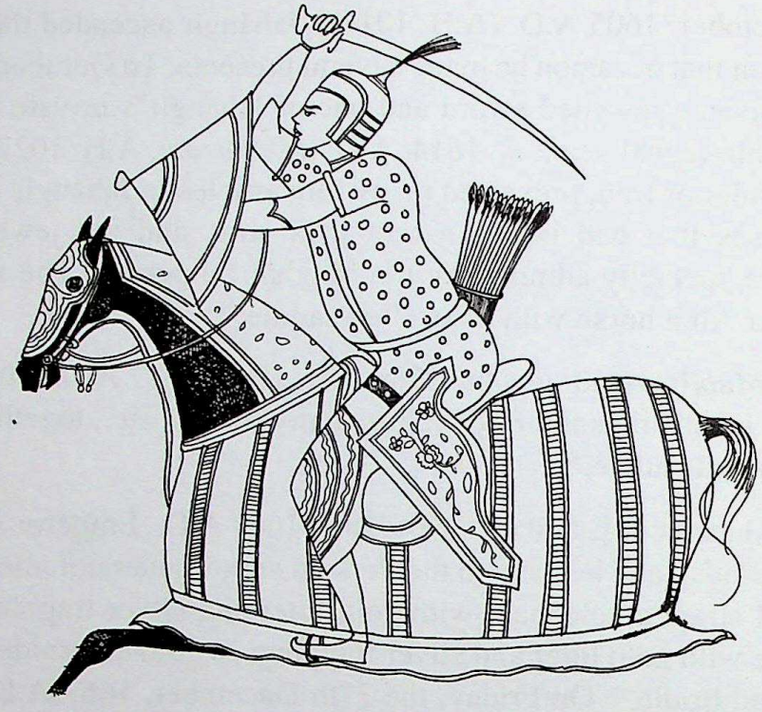


Fig. 66 The animal is bitted, bridled and is guarded with a chanfron, a crinet and an *artak-i-kājem*. The warrior is guarded with helmet, armour coat and arm-guards and leg-guards and is carrying a sword , a shield, a quiver filled with arrows and a *qirbān* (bow-case). From a miniature painting of Rājpūt school, 18th century A.D.

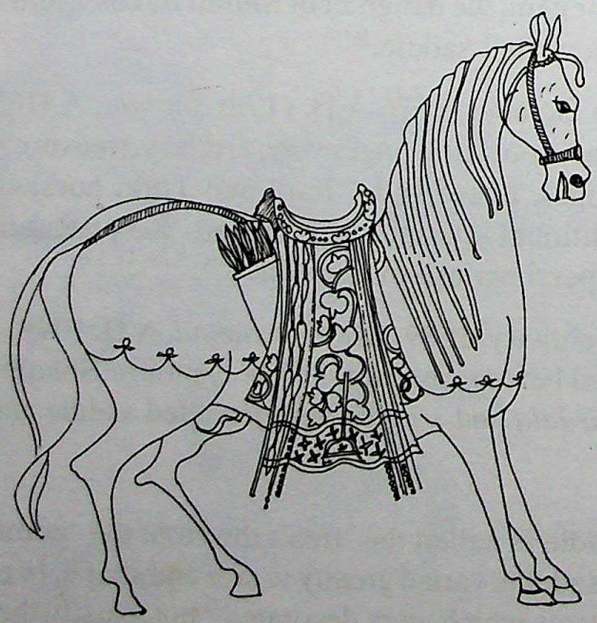


Fig. 67 Saddled horse. The covering on the back and the saddle are tastefully decorated. Based on a miniature painting, 17th century A.D.

MARĀTHĀ AND MUGHAL SADDLES:

The early Marāthā saddles[45] were long with very high pommels and cantles. While on a raid the Marāthā cavaliers could sleep on the saddle itself. The Mughal saddles were comparatively smaller with fairly high pommels usually with a double spiral at the top. The centre was nearly flat. These saddles were generally painted and elaborately decorated. The seats were covered with leather or velvet. Silver was very often used in the ornamentation of a Mughal saddle. Many were inlaid with bone or ivory chips and a few were studded with jewels or semi-precious stones.

ORNAMENTATION:

The personal saddle of Tīpū Sultān is at present displayed in the Zarkoe Selo Collection, State Hermitage, Leningrad. Its peak terminates in a swan's neck. It is of silver *repoussé* work and chiselled with representations of the wild animals of the chase. The stirrups are of silver gilt and enriched with flowers in enamel. The harness belonging to this saddle is composed of head-piece, breast-plate and crupper in silver gilit, a shabrack of red silk covered with gold embroideries and tassels of gold.[46]

SADDLE-CLOTH:

The saddles were usually covered with a saddle-cloth (also called *ghāsiyā* or *oostuck*). It was generally square with openings for the horn and cantle of the saddle. Unlike the European saddle-cloth it was put over the saddle.[47] Abul Fazl says that the saddle-cloth was richly embroidered with gold thread. It was specially made for this purpose.[48]

SADDLE-STRAP (Pls. XXXV, XXXVI):

The saddles were tied with one (sometimes more than one) broad strap crossing the horse's chest and fastened to the saddle to keep it from slipping back. It was used as much for decoration as utility and many are very ornate (fig. 69).

Use :

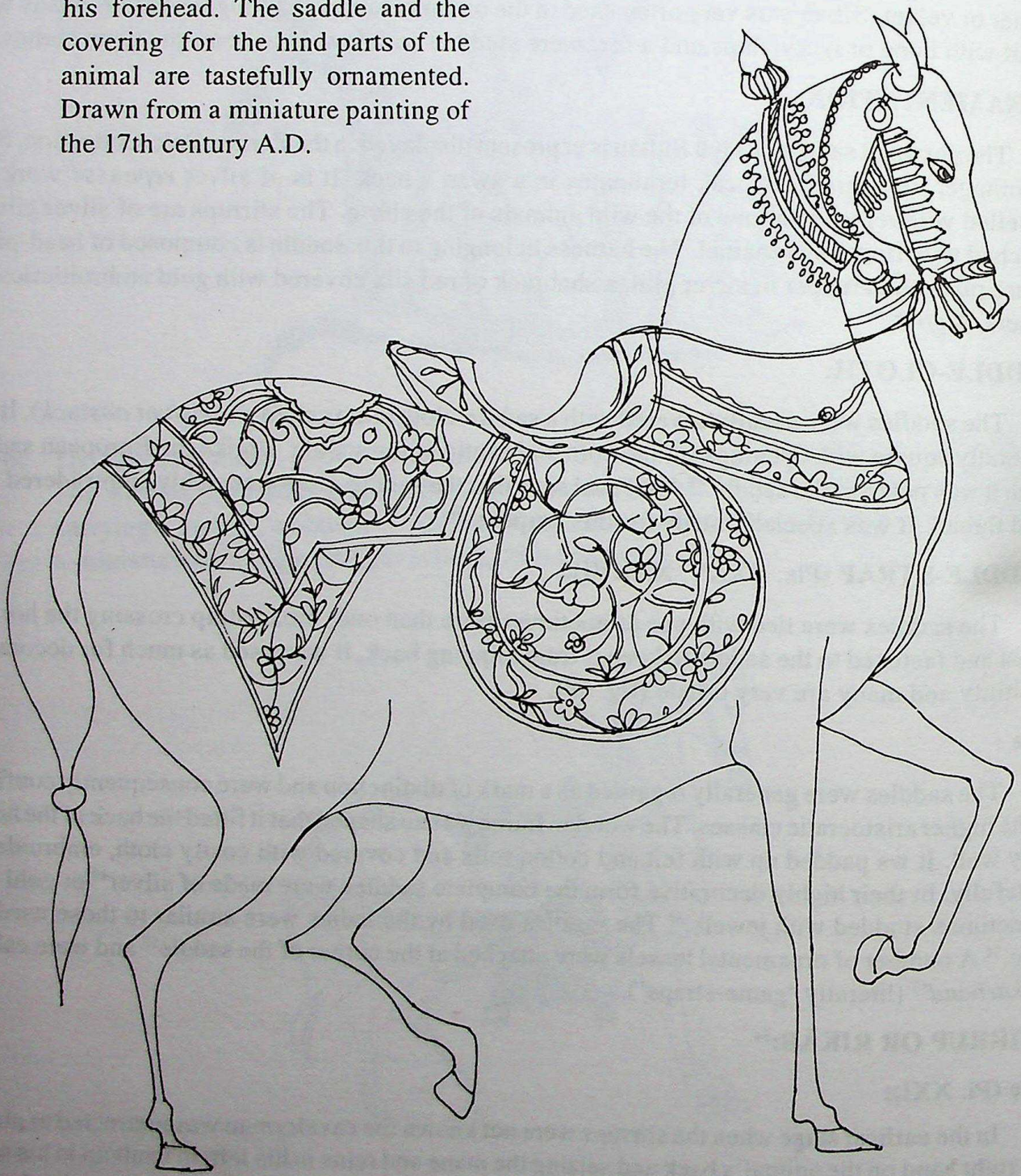
The saddles were generally regarded as a mark of distinction and were consequently confined to the higher aristocratic classes. The wooden frame was so shaped that it fitted the back of the horse very well. It ws padded up with felt and cotton rolls and covered with costly cloth, embroidered tastefully. In their highly decorative form the complete saddles were made of silver[49] or gold and sometimes studded with jewels.[50] The saddles used by the ladies were similar to those used by men.[51] A number of ornamental tassels were attached at the corner of the saddle[52] and were called *shikārband*[53] (literally 'game-straps').

STIRRUP OR RIKĀB:[54]

Use (Pl. XXI):

In the earliest stage when the stirrups were not known the cavalryman was instructed to place his right hand on the animal's back and seizing the mane and reins in his left, to vault up to his seat (fig.70). If he carried a lance, it could be used as a vaulting pole in his left hand, the reins being transferred to the right. This kind of mounting could have sometimes proved dangerous.[55] Once the

Fig. 68 Beautifully decked horse, bitted and bridled. A number of ornamental bands are around his neck and upon his forehead. The saddle and the covering for the hind parts of the animal are tastefully ornamented. Drawn from a miniature painting of the 17th century A.D.



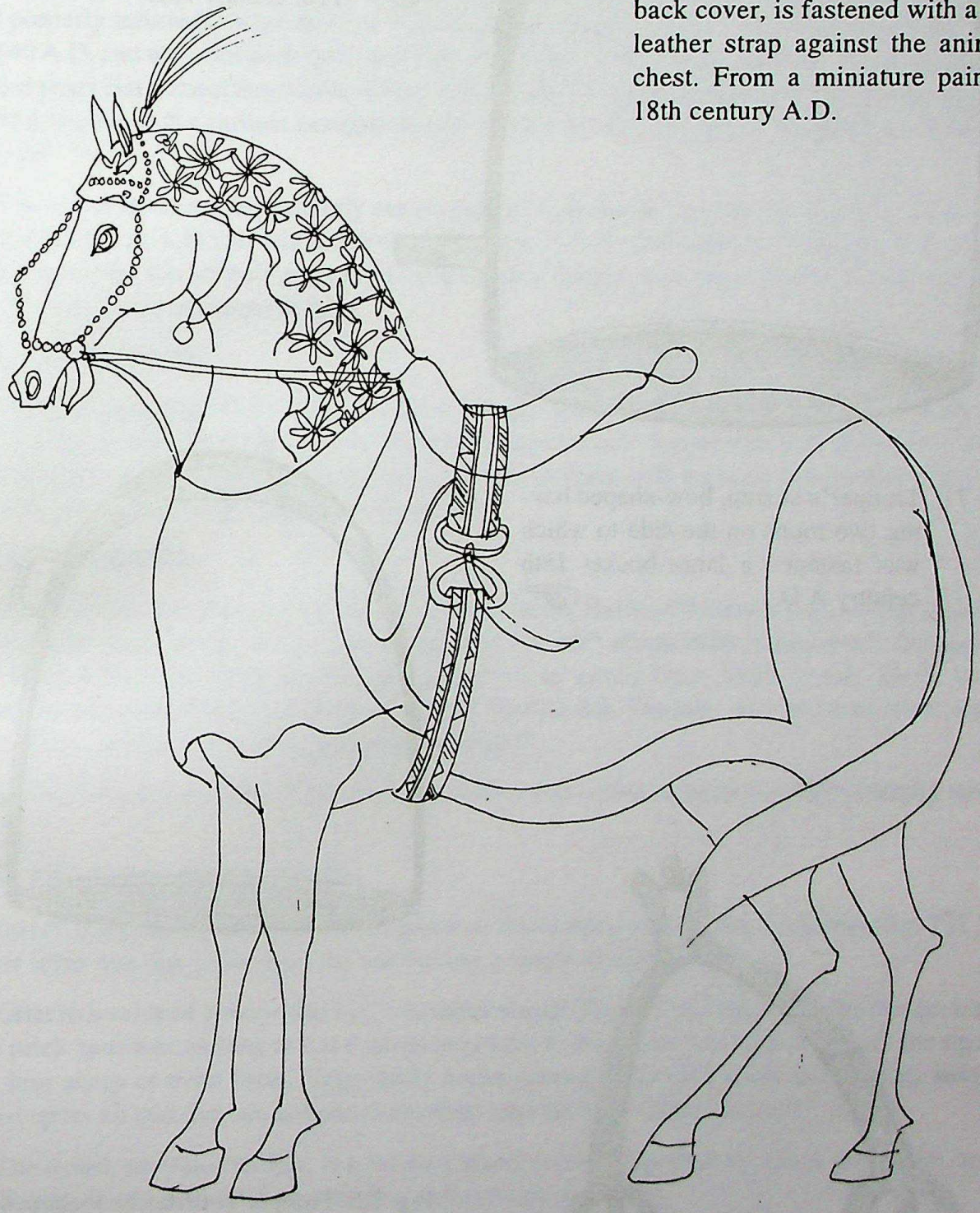


Fig. 69 An excellent crinet guards the neck of the horse. A saddle, kept over the back cover, is fastened with a huge leather strap against the animal's chest. From a miniature painting, 18th century A.D.

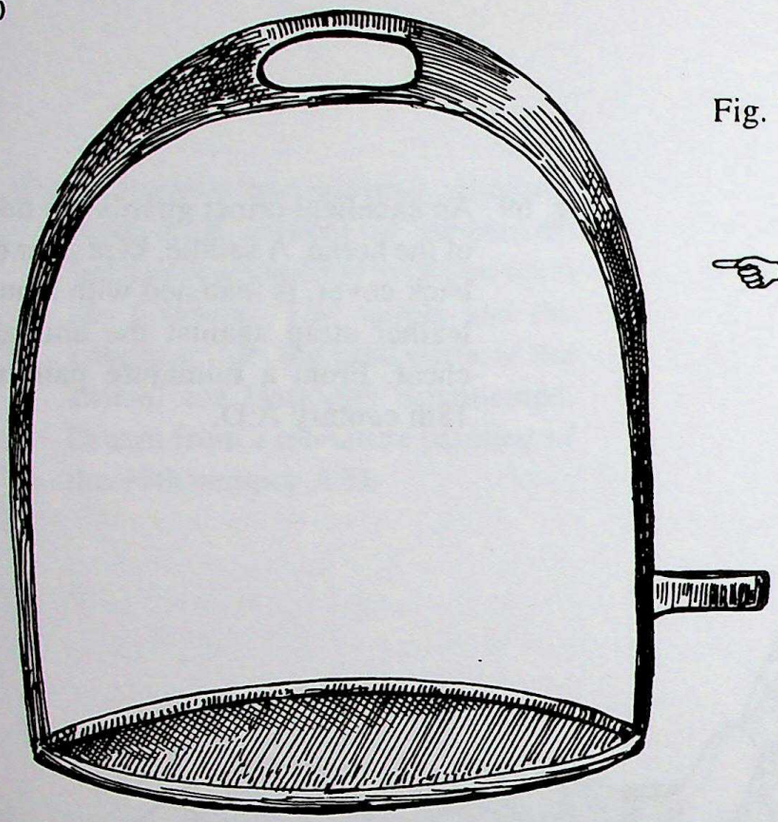


Fig. 70 Stirrup, bow-shaped with a hole on the top. The tread (foot-plate) is flat and oval. A projection on one side served the purpose of a spur. Mughal, 17th century A.D.

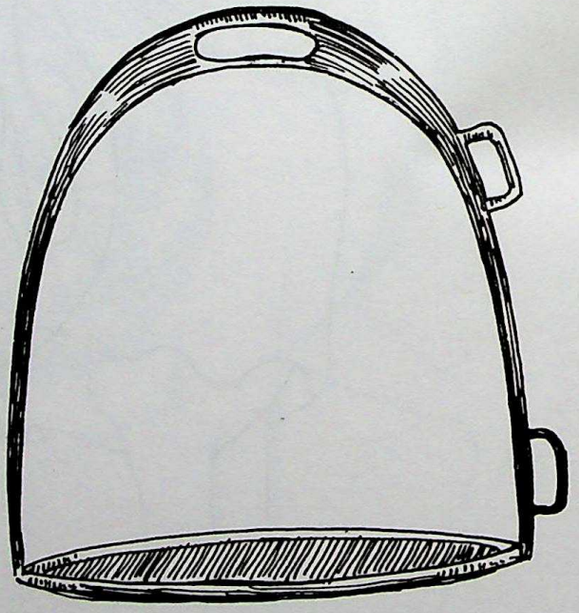


Fig. 71 Trooper's stirrup, bow-shaped having two loops on the side to which was fastened a lance-bucket 18th century A.D.

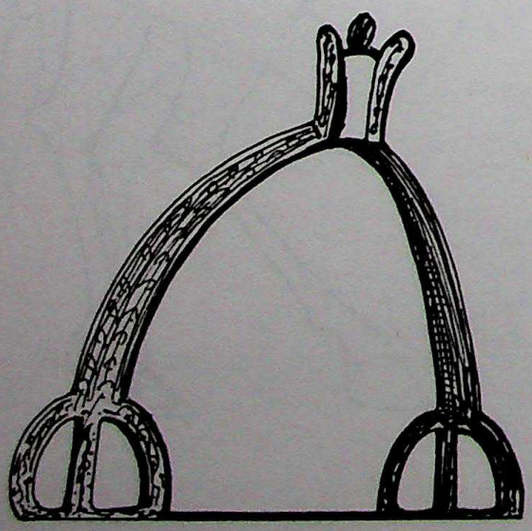


Fig. 72 Trooper's stirrup, bow-shaped, brass moulded, Central India, 17th century A.D.

stirrups were introduced their advantages were so obvious that their use spread very rapidly. The stirrups have been used universally (fig.71) (Pls. XIV to XIX).

ORIGIN:

The simplest stirrup is a knot on the end of a rope which is held between the toes. G.C.Stone is not properly informed when he says, "the saddles were not used by the cavalry until about the year 340 A.D. and were not perfected until fifty years later.[56] No stirrups were used until nearly two hundred years later, about the middle of the sixth century."[57] John Marshall, however, opines, "The Sānchī depiction is the earliest example by some five centuries of the use of stirrup in any part of the world".[58]

The use of the stirrup is distinctly seen in one of the Mathurā sculptures of the Kushāṇa period (1st-2nd centuries A.D.) now in the Boston Museum.[59] A few sculptures belonging to the Gupta period reveal that the stirrups were used by the riders. Its use was gradually becoming more and more popular in the subsequent days.

HORSE-BREAKERS:

Amīr Khusrau says that during Alāuddīn Khaljī, "some of the horses are given to the horse-breakers, so that with the stroke of their whips they may make the horses run as swift as deer. Others are given to the *pāiks* (footmen) so that they may ride on them with the help of their sharp stirrups. The *mufrīdān-i-rakāb* were also given horses".[60]

STIRRUP-HOLDER:

Bābur in his autobiography mentions the name of one Haidar *Rikhābdār* (*i.e.*, stirrup-holder)[61] who was with him in his early days and another Yusuf-i-Alī[62] whom Bābur relied much. On the 28th June, 1519 A.D., Abul Muslim Kukuldāsh arrived as envoy from Shāh Shujā. There was a swimming competition between Kukuldāsh and Yusuf-i-Alī. The later won and was rewarded by Bābur with a saddled horse and a jewelled stirrup.[63]

During Jahāngīr the department of light artillery was called *topkhānā-i-rikāb* (literally stirrup arsenal).[64]

SPUR, PRATODA OR MAHMÉZ:

Spur[65] is a pricking instrument with point or rowel worn on horseman's wheel (fig. 73). The earliest form was the 'prick spur' or one having a single straight point.

Later it developed into a rowel *i.e.*, 'a toothed wheel' (fig. 74). In a few cases the line (or blade) of the prick spur was so long that it even proved fatal to the horse; to avoid the injury the tip was made less sharp or even blunt. Very rarely a stop arrangement was made in the long, straight, pointed spurs so that they do not penetrate deep into the body of the horse.[66]

The rowel, as stated earlier, is a toothed wheel and is supported by a fork called the 'rowel box'. It was fastened to the feet with the leather or cotton straps.

The stirrups were invariably made of metal. Some stirrups were very large with huge treads

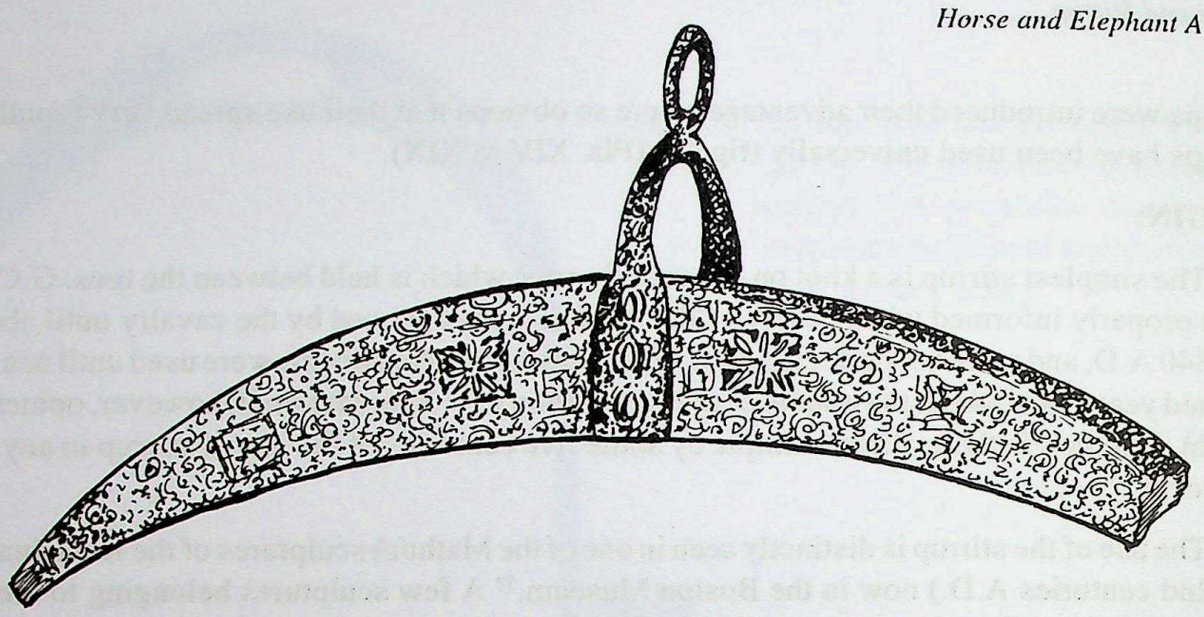


Fig. 73 Stirrup, Mughal, late 16th century A.D. The foot-plate is 14 inches long, 5 inches wide in the middle Iron inlaid with gold. The front part served the purpose of a spur.

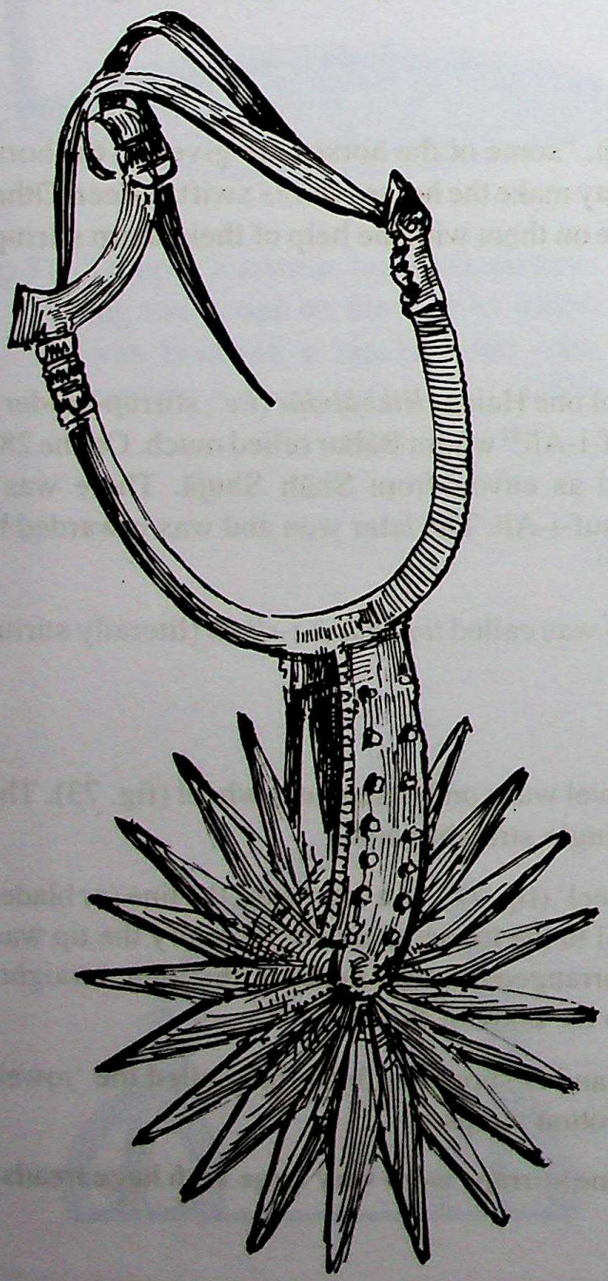


Fig. 74 Spur, Mughal, 17th century A.D. The rowels are six inches in diameter and have twenty-four points.

with sharp corners that were sometimes used as spurs. Some stirrups had a very long and wide foot-plate (15 inches long, 5 inches wide in the middle and 8 inches at both ends). Sometimes the leather or cotton flaps were also used as stirrups but generally the foot-rest was made of iron and very rarely of wood. It was a U-shaped piece with a flat base.[67]

References

1. The saddler was called *ẓīn-sāẓ* and saddlery was known as *ẓīn-sāẓī*.
2. *Mahābhārata*, *Ādi Parva*, 84-21.
3. *Ibid.*, *Virāṭa Parva*, 21.33.
4. *Ibid.*, *Bhīṣma Parva*, 54, 59 ff.
5. *Ibid.*
6. *Ibid.*
7. *Ibid.*, 96.74.
8. *Ibid.*, VI.96.76.
9. E.W.Hopkins, *The Social and the Military Position of the Ruling Caste in Ancient India*, originally published as a long article in the *Journal of American Oriental Society* (JAOS), vol. XIII (1889), reprinted as an independent book (Varanasi, 1972), p. 209 *f.n.* In the *Mahābhārata*, VII. 23.37, we find a chariot's steed. ''रुक्मपीढ़ावकीर्ण हयाः''
10. Maisey, *Sānchī and Its Remains*, pl. VI, fig. 2; pl. IX, fig. 2; pls XV, XX, XXVII, etc.
11. Cunningham, *The Stūpa of Bharhut*, p. 42, pl. XXXII.
12. G. Yazdani, *Ajantā*, part I, 19 *n.* 3.
13. *Ibid.*
14. *J.A.O.S.* (1893), pp. 29 ff.
15. Al Berunī (11th century A.D.) gives a totally different picture. He writes, "Indians ride without a saddle, but if they put on a saddle, they mount the horse from its right side", *vide* E.C.Sachau, *Alberuni's India*, reprinted (Delhi, 1964), 1, p. 181.
16. M.Habib and K.A.Nizami (ed.), *A Comprehensive History of India*, vol. V (The Delhi Sultanat) (Delhi, 1970), p. 186.
17. Only once it proved fatal. In 1210 A.D. an accident cut short the life of Kutubuddīn Aibak. He fell down from his horse while playing *chaugān* (medieval polo) and the raised pommel of the saddle pierced into his ribs. He died instantly.
18. Hazrat Amīr Khusrau, *Khazainul Futuh* tranalated into English with notes by Muhammad Habīb (Madras, 1931), p. 99.
19. A.S. Beveridge (tr.), *Bābur-nāmā*, reprinted (New Delhi, 1979), p. 147; *Bābur-nāmā*, folio 95 b.
20. *Ibid.*, p. 160; *Bābur-nāmā*, folio No. 103.
21. One such incident took place in 1507 A.D. when Bābur's army had to perform a perilous mountain journey, *vide* A.S. Beveridge, *op.cit.*, vol. I, p. 309, *Bābur-nāmā*, folio 194.

22. *Ibid.*, p. 399; *Bābur-nāmā*, folio 236.

23. A square shawl of cloth of gold bestowed as a mark of rank and distinction.

24. A.S. Beverridge, *op. cit.*, p. 527; *Bābur-nāmā*, folio 297.

25. *Ibid.*, p.338; *Bābur-nāmā*, folio. 212.

26. Major Charles Stewart (tr.), *Tezkereh Al Vakiāt* under the heading *Private Memoirs of Moghul Emperor Hūmāyūn*, reprinted (Delhi, 1972), p. 19.

27. Mirzā Yādgār, then the Governor of Bhakhhar, married to the daughter of the Emperor Bābur but in consequence of his treason was finally put to death.

28. Major Charles Stewart (tr.), *op. cit.*, p.34.

29. *Āin-i-Akbarī, Āin* 53, p. 146.

30. *Ibid.*

31. A. Rogers and H.Beveridge (tr.), *Tuzuk-i-Jahāngīrī*, reprinted (vols. I and II in one format) (Delhi, 1968), vol. I, p. 78.

32. It has been called *ẓīn-i-murassā karī-i-Farangī*.

33. A. Rogers and H.Beveridge (tr.), *op. cit.*, vol. I, p. 237.

34. *Ibid.*, p. 248.

35. The presents given by Nūr Jahān included *nādirī* dress with embroidered flowers, adorned with rare pearls, a *surpéch* (turban ornament) decorated with rare gems, weapons studded with jewels, a special elephant with two females, etc. The feast cost Rs. three lakhs; *ibid.*, p. 397.

36. Sāqī Mustād Khān, *Maasīr-i-Ālamgīrī i.e., A History of the Emperor Aurangzeb Ālamgīr* translated and annotated into English by Jadunath Sarkar (Calcutta, 1947), p. 22.

37. *Ibid.*, p. 43.

38. *Ibid.*, p. 46.

39. *Ibid.*, p. 77.

40. *Ibid.*, p. 94.

41. *Ibid.*, p. 195.

42. The word 'pommel' is also used for the knob on the end of a sword-hilt or on the butt of a pistol.

43. The saddle with its high 'arciones' or 'peaks' (back and front) was in itself an effacious protection for the waist and the loins. The word 'cantle' is sometimes used for either peak but it is generally accepted as the name for the rear peak and the front peak is called 'pommel', *vide*, C. Ffoulkes, *Armour and Weapons*, reprinted (England, 1973), p. 90, fig. 40.

44. A number of references are available in the *Bābur-nāmā, Tuzuk-i-Jahāngīrī*, etc., where the saddles are recorded to have been mounted with gold and silver.

45. The Marāthā State had its own grasslands or *kurans* for the fodder of the war-horses while stationed in the country, and compulsory free labour was often employed for the service of the cavalry. Thus in 1775 A.D., the services of 323 *mahārs*, 54, *mangs*, 52 cobblers and 10 saddlers were requisitioned from the

districts of Poona and Belapur, etc., for repairing the saddles and bridles of the private cavalry of the Peshwā, *vide*, *Peshwa Diaries*, vol. VI, pp. 185-6.

46. W.Egerton, *op. cit.*, p. 125.

47. G.C.Stone, *op. cit.*, p. 247.

48. *Āin-i-Akbarī*, tr. Blochmann, *op. cit.*, vol. I, p. 413.

49. S.P.Verma, *op. cit.*, p. 105, pl. LXVIII, fig. 1.

50. *Tabaqāt-i-Akbarī* by Nizāmudīn Ahmad, translated by B.De in three volumes (Calcutta, 1927-1939 A.D.), See De, vol. II, p. 365.

51. *Vide., Tārīkh-i-Khāndān-i-Timūriā* (Patna), folio 7.

52. Gulbadan, *Humāyūn- nāmā*, translated from Persian into English by A. Beveridge (Royal Asiatic Society, London, 1902 and 1972), p. 128.

53. W.Irvine, *The Army of the Indian Moghuls*, reprinted (Delhi, 1972), p. 72.

54. It is also spelt as *rakāb*, *raqāb* or *riqāb*.

55. Herodotus informs us that Cambyses, King of Persia in 522 B.C., was similarly leaping on to his horse when the tip of his sheath fell away and the naked blade of the lance was driven into his thigh. Cambyses sustained a dangerous wound from which he never recovered.

56. Representations of the riders in the West Asian, in Greek and in Roman Art, and even upon the equestrian reliefs of the Sassanian dynasty of Persia, always show the legs of the soldiers dangling free and unprotected. It is clear that neither Europe nor Western Asia put forward any claim in the invention of the stirrup.

57. G.C.Stone, *op. cit.*, p. 531.

58. John Marshall, *A. Guide to Sānchī*, p. 138, n. 3. A.D.H. Bivar in his research paper, "The Stirrup and Its Origin", published in the *Oriental Art*, New Series, vol. I, No. 2 (Summer, 1955), pp. 61-65, says, "The archaeological evidence and that of the literary sources fit together convincingly. It appears that the stirrup was evolved, in a manner which is at present uncertain, amongst the nomadic peoples of Siberia and the Altai, probably during the supremacy of the Juan Juan in this region during the fifth century A.D.".

59. S.K.Bhakari, *Indian Warfare* (New Delhi, 1981), illustration No. 3, facing page 59.

60. *Khazainul Futuh* (tr.), *op.cit.*, p. 9.

61. *Bābur-nāmā* (tr.), op. cit., p. 91.

62. On Friday, the 26th January, 1519 A.D., Yusuf-i-Alī was sent off to Kabul with letters bestowing Hindāl (Dildār's son), not yet born, on Māhim.

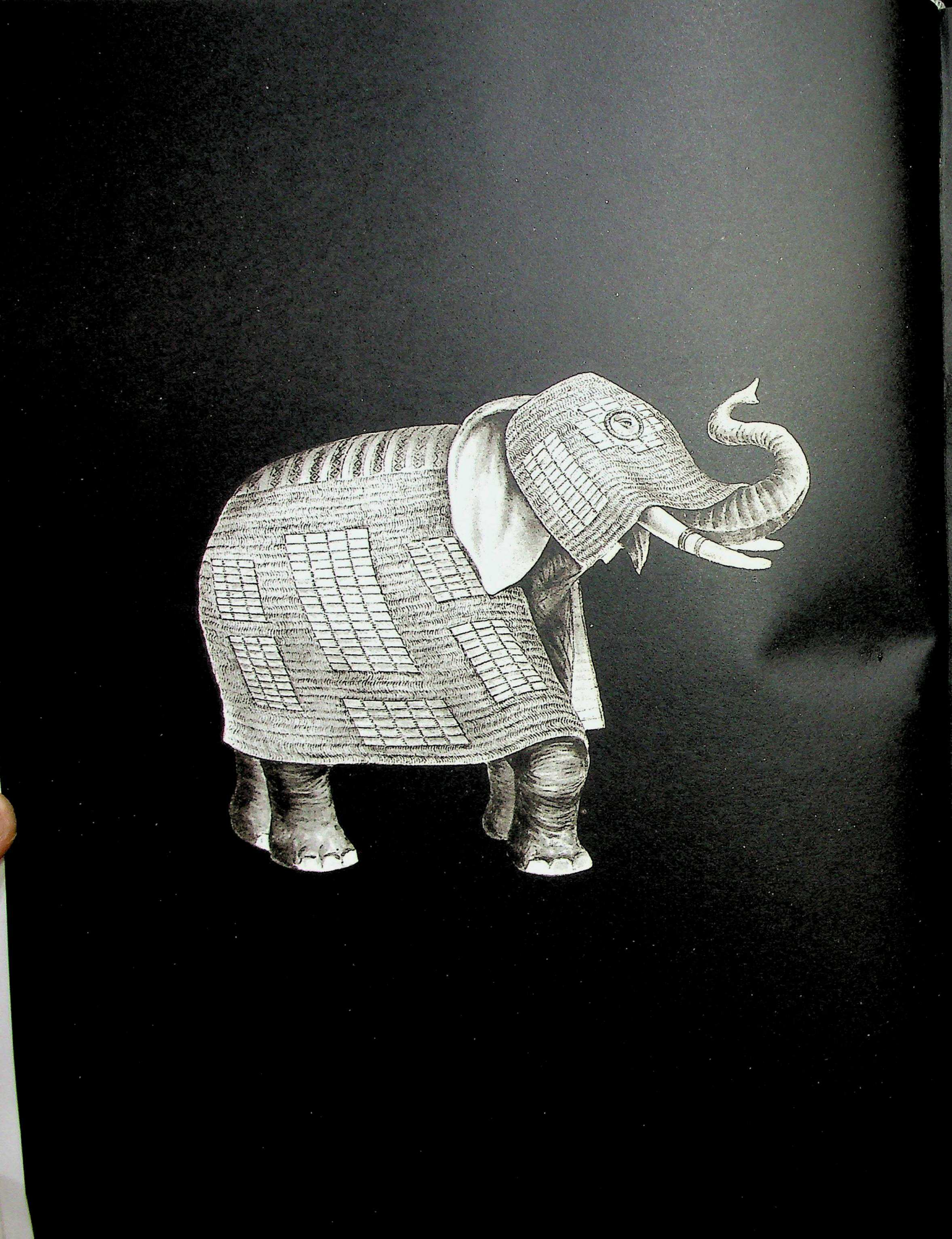
63. *Bābur-nāmā* (tr.), *op. cit.*, p. 401. It seems that during Bābur 'stirrup-holder' had become a class name, thus, Muhammad Ali, son of Haidar *Rikhābdār*, was also called *Rikhābdār, ibid.*, p. 418.

64. *Tuzuk-i-Jahāngīrī* (tr.), *op. cit.*, p.22.

65. When the horses were covered with plate armour the spurs had to have very long shanks in order to reach the animal under the flanchards. These were then called 'arming spurs', *vide*, G.C.Stone, *op.cit.*, p. 18.

66. Along with berryl-hand *aṅkushas* (goads) for the elephants in the *Mahābhārata*, VIII. 58.30. The chariot-horse was pricked with a *pratoda* (spur), the elephant with a *tottra* and an *aṅkusha*, and the cavalry-horse was driven by a *kasha* (whip); *ibid.*, 134.6. The whip has perhaps not undergone any change during these hundreds of years.

67. S.P.Verma, *op. cit.*, p. 105, pl. LXVIII, figs. 2-3 f.



5
Elephantry Through the Ages

The Indian rulers placed great reliance on the elephants. Their nerve wrecking feats of breaking enemy-lines, of trampling to death many a gallant warrior, of tearing their bodies asunder, of scaring horses to flee with their tails tucked in their hinds, of seizing and tossing the standard-bearers in the air, of battering down the toughest of the obstacles and the strongest of the fortifications, crowned them to be the virtual king of the battlefield.[1] The elephants rendered valuable service in the preparation of war.

They cleared the routes in advance of shrubs and trees, formed temporary bridges for river-crossing operations, helped in preparing camping sites, protected flanks, forced entries into the enemy rank and undertook the work that are dangerous to life.[2] They were used as carriages and in the pitched battles served as vantage points for supervision and direction of war.[3] As a royal insignia, as a loyal friend, as an intelligent animal and as a trampling force an elephant was *par excellence*.[4] According to Somedeva Sūrī, "Elephants serve as fortresses in danger, as causeways in traversing waters, as houses on the wayside and as monsters in battle."[5]

The elephants had their weak points too and many Indian victories were turned into defeats only due to the elephants. If wounded, they were liable to get beyond control and then trampled their own men. There are several instances to prove that the Indian king or general mounted on the ponderous beast was exposed and was a target of attack by the enemy. Porus,[6] (326 B.C.), Dāhir (7th century A.D.), Ānandapāla (1008 A.D.) and many others met with the same fate.

ORIGIN AND DEVELOPMENT:

The bones of the elephants unearthed at Mohenjo-dārō,[7] the representation of the animal on the seals,[8] the realistic figures[9] and a big bronze model from Daimābād, Maharashtra, prove beyond doubt that the civilization of Indus, in the plantitude of its prosperity, made use of the elephants[10] which were exported as well. A clay plaque from Sourthern Mesopotamia, datable to 3rd millennium B.C., depicts an Indian elephant ridden by a man.[11] The docility, intelligence and easy obedience of the elephant must have quickly led to its domestication, once it was known and captured.

ELEPHANTRY IN THE VEDAS:

In the *Rigvéda* the several words like *mṛga*,[12] *hastin, ibha* and *vāraṇa*[13] have been used to denote an elephant. At one place hunters are chasing the wild elephants[14] and at another Agni has

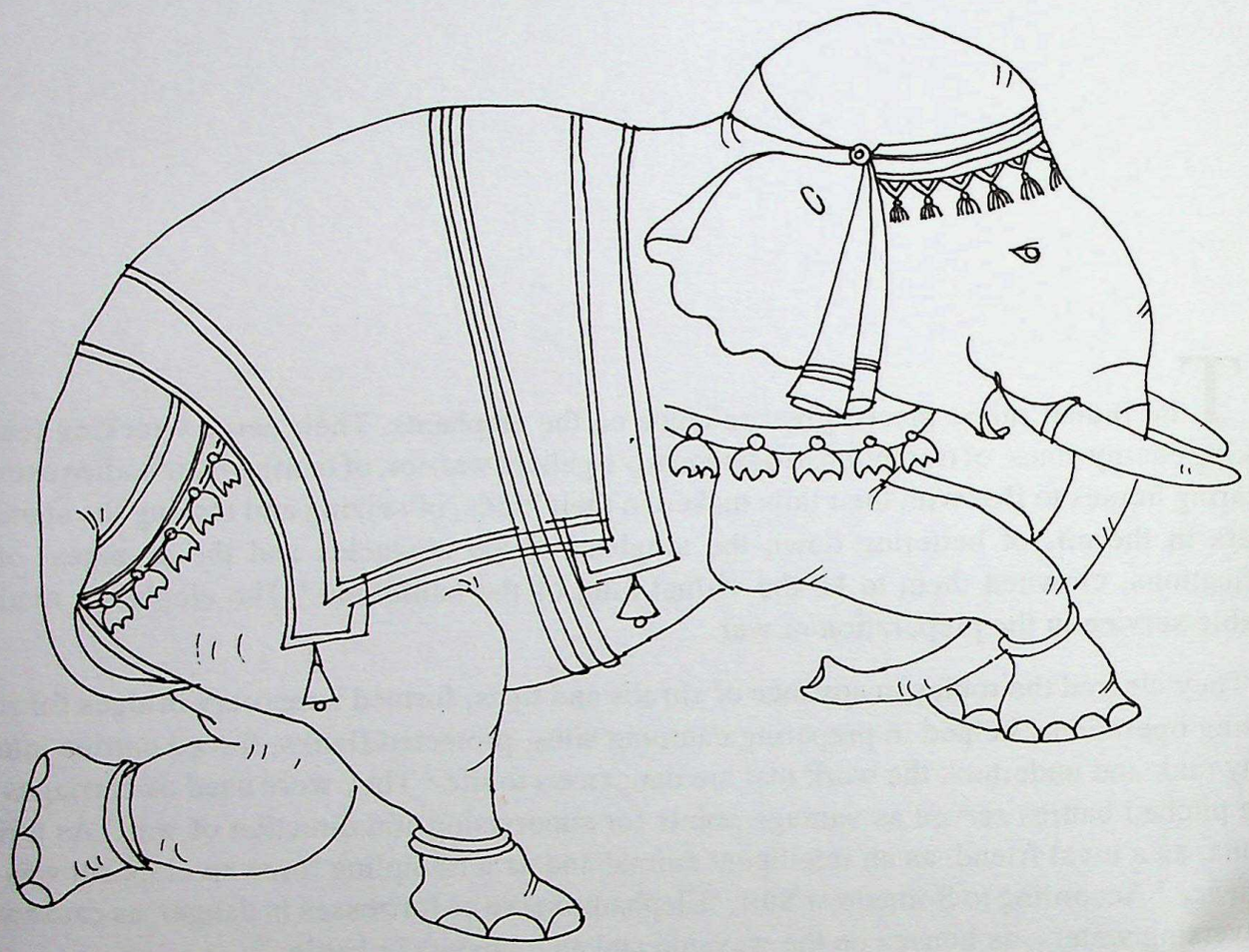


Fig. 75 Elephant decked with an ornamental cloth tied round his head. The quilted covering (*jhūla*) on the back is fastened with ropes; a number of tinkling bells are attached to the rope and are tied round the neck and on the four feet; and the tusks are protected with the tusk-covers.

been addressed to proceed like a king on his elephant (*ibha*).[15] Soma is once compared with a well disciplined and obedient king of the elephants.[16] It is, therefore, certain that during the period of the *Rigveda* the elephant was caught, domesticated and put to many use. Whether or not it was used in the field of battle is still uncertain.[17]

Elephant has been referred to more than once in the *Atharvavéda*.[18] The *Yajurvéda Saṁhitā*[19] mentions *hastipa*, elephant-keeper, as the representative of a regular profession. The *Aitaréya Brāhmaṇa*[20] speaks of Bharata Daushanti who performed a horse-sacrifice (*ashvamédha*) and gave away "beasts black with white tusks, covered with golden trappings".[21] The *Sāma Vidhāna Brāhmaṇa* mentions elephants among the four divisions of the army.[22] The *Chāndogya Upaniṣad*[23] talks of gold, slaves, wives, fields, cows, horses and elephants in terms of which wealth and status are reckoned.[24]

ELEPHANTRY IN THE RĀMĀYAṆA:

The city of Ayodhyā was crowded with elephants belonging to the races of Airāvata, Mahāpadma, Anjana and Vāmana and those of the Bhādra, Mandara and Mṛga species (found on the Himālayas and Sahya range respectively) as well as the cross-breeds known as Bhādra-Mandara-Mṛga, etc.[25]

Some divine elephants referred to are Virupākṣha (guarding the eastern quarter), Saumānasa (guarding the western quarter), Bhādra (guarding the north), and Mahāpadma (guarding the south).[26] Nine thousand elephants, duly caparisoned, followed Bharata when he went to see Rāma at Shringavérapura.[27]

With four arrows the angry Khara hit Rāma in his various limbs as one would strike an elephant with javelins.[28]

When Hanūmān visited Lankā he observed that in the palace of Rāvaṇa elephants of superior breed, vanquishers of hostile tuskers and destroyers of enemy forces, which were endowed with grace and were trained in the methods of warfare, carried on with elephants.[29]

On reaching the precincts of Lankā, Rāma held deliberations with his generals as to how to achieve success in their expedition. Then Vibhīṣaṇa apprised Rāma of the arrangements made by Rāvaṇa, his four-fold army[30] and his total army strength. He told that Rāvaṇa had ten thousand completely harnessed war-elephants ready to combat.[31]

In the course of battle between Rāma and Rāvaṇa the chiefs of Rāvaṇa were mounted on the backs of steeds and elephants provided with golden trappings. The warriors were clad in coats of mail dazzling like the sun.[32]

The elephant-riders of Vajradamastra, one of the generals of Rāvaṇa, were said to have "intrepid elephants which were intoxicated with ichor and looked like moving hills sallied forth. Mounted by *mahāuts* carrying iron clubs and goads in their hands, they were skilled in warfare.[33]

Rāma was, for a while, perturbed to see the huge army of Rāvaṇa furnished with pennants and standards and canopies of every kind, armed with missiles and weapons like darts, swords and spikes, made up of intrepid soldiers and elephants resembling the Mahendra mountain in size.[34]

Rāma was a celebrated rider of elephants[35] and horses and so was Ravāṇa and were other knights. The *Ayodhyā-Kāṇda*[36] speaks of the elephant-forest as deserving of the king's care.

ELEPHANTRY IN THE MAHĀBHĀRATA:

The huge, heavy, ferocious beasts, once tamed, became the chief offensive weapons in the hands of the warlords of the *Mahābhārata* period.[37] In the *Mahābhārata* it is often recorded that the *gajārōhā* (elephant-rider) rides the *dantin*[38] (the tusked one) or the *kunjara*[39] (the defender). These war-animals were employed *en masse* as a moving wall in attack at the outset of the battle, as a standing wall in the defence and thirdly, as individual foragers through the confused crowd of blood-seeking desparadoes. The riders were armed with knives, daggers, pots of oil, stones, spears, other weapons and missiles with which to strike the soldiers beneath.[40] The rider was called *gajārōhā* or *hastisādhinaḥ*.[41]

The important kings, princes or chiefs mounted elephants very rarely in the Mahābhārata war and it is probable that the practice of a king fighting from a great *howdāh*[42] (*vimāna*) on an elephant's back is of later origin than the other methods of car-fighting, yet we find a few instaṇces of elephants being ridden in war, notably by the Yavana prince.[43] Duryodhana[44] entered the war on a tall elephant and so did Bhāgadatta who charged, sitting on his elephant 'Supratīka' raining arrows of black iron (*nārācha*) on the enemy.[45]

King Shaibya took his seat on a princely elephant with a proud banner on its back.[46] Elsewhere Prince Vikarṇa rushes against Arjuna on an elephant supported by four chariots.[47] Once Bhīma left his chariot for a while and fought from the back of a huge elephant.[48] With his keen edged weapons, Abhimanyu cut into pieces elephants and their riders, their hooks and standards and banners, quivers and coats of mail, girth and neck-ropes, blankets and bells, and also those foot-soldiers who protected them from behind.[49]

Various breeds of elephants were known.[50] In the *Sabhā Parva*[51] Yudhiṣṭhira praises his elephant with fine white tusks, decked with golden girdles, ornaments and garlands who was capable of giving victory to his master in war and bearing every kind of noise on the battlefield.[52] The elephants could batter down the walls of the enemy strongholds.[53] It was believed that the most suitable age for an elephant to enter battle was sixty and the gift of sixty-years-old elephant was considered very generous.[54]

The code of ethics[55] that the elephant should fight only an elephant was sometimes violated.[56] Vikarṇa on an elephant fought Arjuna on a chariot[57] and so did Bhāgadatta.[58] The beast of Bhāgadatta drenched the horses of Bhīma[59] with water from his trunk and killed horses and charioteers.[60]

The *Bhīshma Parva*[61] informs that the foot-soldiers that protected the war-elephants were themselves armed with pikes, bows, battle-axes, maces, clubs, *bhiṇdpālas*,[62] lances, iron-mounted bludgeons and bright swords.

Fighting apart, the elephant in the Mahābhārata days served the armies in various ways. He cleared the way for their marches, forded the rivers that lay on the way, guarded their front, flank and rear; battered down the walls of the enemy[63] and proclaimed his king's victory.[64]

In the Mahābhārata war elephants were attended by protectors, sometimes four, one on each corner of the beast.[65] But we find seven car-men as the usual number guarding a single elephant.[66] In one passage of the *Mahābhārata*[67] seven men ride an elephant, two leading it by hooks (*aṅkushadhara*), two carrying bows, two carrying swords and one carrying a spear and a club (*shaktipināk adhṛt*).

In the *Mahābhārata* the elephants were armed with spikes and iron harness and were wearing a girth (*kakshyā*). Neck chains, bells, wreaths, nets, umbrellas and blankets were also used as elephant equipments.[68] At one place the metal armour for an elephant is described.[69] Rarely the gold net (*jāla*) were also fastened to the famous elephants.[70] The coverings, as in the case of the horses, have been described by various names such as *kambala, astara, astarṇa*, etc., and were of wool or goat-hair (*rānkava*). Coloured woollen blankets (*kutha*) were also common.[71] The tusks were gilded and the bells were sharp sounding (*paṭughantāḥ*).[72]

War-elephants were sometimes called by pet names.[73] Droṇa named his elephant for his son 'Ashavathāmā'.[74] The weapons employed against the elephants during this period were the iron arrows (*nārācha*)[75] and javelin. Bhīshma killed an elephant with a single *nārācha*.[76] The verse saying that Arjuna never shot two arrows at an elephant - only one *nārācha* was invariably fatal- is a plain case of poetic exaggeration.[77] Arjuna, however, killed Vikarṇa's elephant with an iron arrow shot from his 'Gāṇdīva' bow drawn up to the very ear.[78]

ELEPHANTRY IN THE SIXTH CENTURY B.C.:

In the *Nikāyas*[79] and the *Vinaya*[80] the elephants have been acknowledged as indispensible part of the four-fold army. It was a symbol of royal grandeour and was used in peace and war alike.[81] The *Samannaphala Sūtta* of the *Dīgha Nikāya* describes riding-elephants of King Ajātshatru[82] and *Majjhima Nikāya* refers to the war-elephant of Prasénjit whose name was 'Ekapundarīka'.[83] The *Raṭṭhapāla Sūtta* informs that the Kuru King could make good use of elephant in war ever since he was a youth of twenty.[84] Once Buddha asked Prince Bodhi if he was skilled in the art of handling an elephant and an elephant-goad.[85]

The training of an elephant has been narrated in detail in the *Dantabhūi Sūtta*.[86] The trainer teaches his elephant to advance and retreat, to get up and sit down, etc. He then ties a shield to his trunk; a man holding a lance sits on the elephant's neck, while others holding lances stand on all sides. The mock battle is then conducted and the elephant is given practical training of offence and defence.[87] The *Aṅguttara Nikāya*[88] says that the elephant should be capable of destroying enemy elephants, horses, chariots and foot-soldiers; should be able to bear blows of lance, sword, axes, hatchet and arrows and should go wherever asked.[89] The *Vinaya Piṭaka* records that twelve men, four on its back and two looking after each foot, accompanied an elephant in war.[90] Once a *hallhārōhō gāmaṇī*[91] (head of the mercenary soldiers of the elephant corps) visited Buddha.

ELEPHANTRY IN THE FOURTH CENTURY B.C.:

The elephant became the most important arm about the time of Alexander's invasion in 326 B.C. The age of the chariot had passed and that of the elephants had begun. In his struggle against Alexander, Porus pinned all his hopes on the elephants in the army. In the battle array he deployed

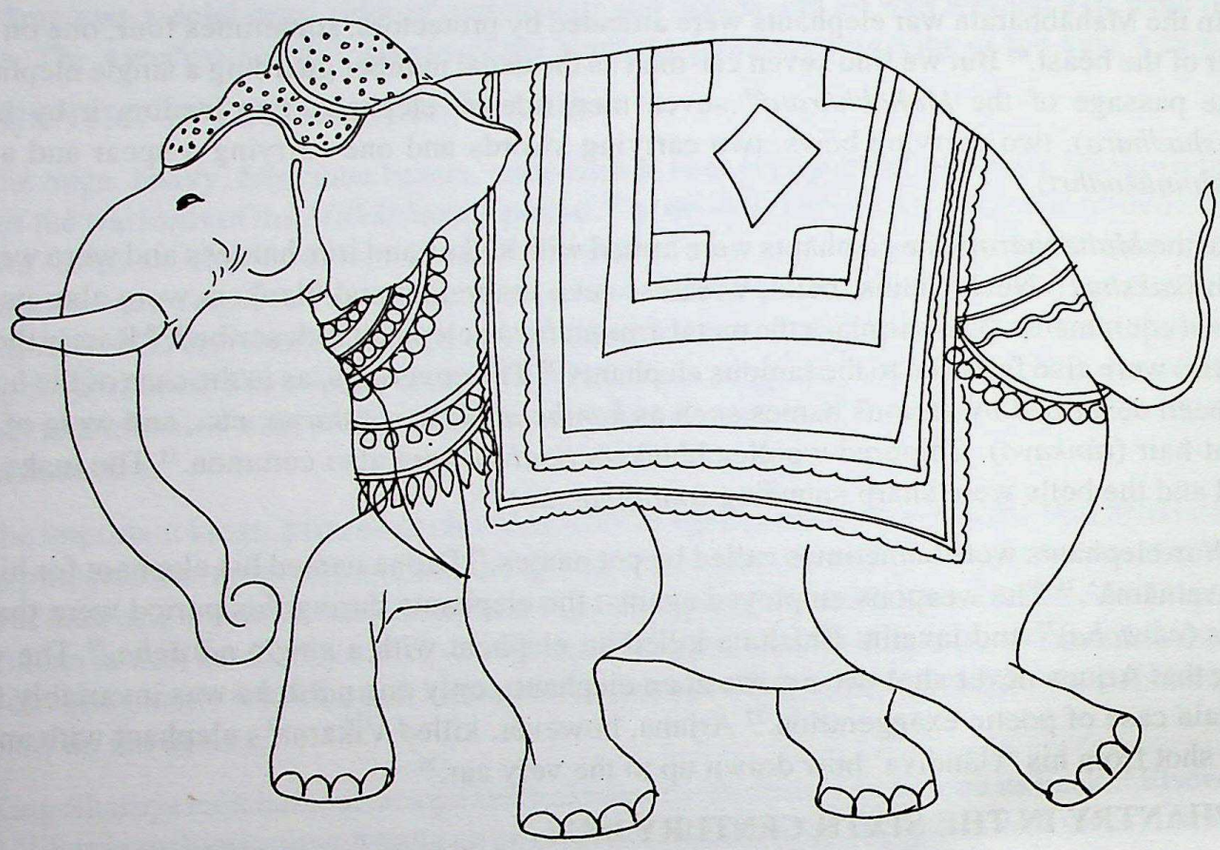


Fig. 76 An embellished elephant. The forehead is protected with a decorated *mukuṭa* (crown), the neck with *haikala* (chains), the back with *jhūla* and the hind part with thick cloth.

the elephants along the front line like bastions in a wall.[92] Alexander had foreseen that "his horses would refuse to mount the opposite bank where the elephants would at once encounter them and by their very aspect and by their roaring would terrify them outright...on seeing the elephants even at a distance off, they (the horses) would become frantic and leap into the water" (Arrian).[93] Curtius provides a more detailed account of what the elephants did and how the enemy encountered them. He says, "upon this the elephants, applying to good use their prodigious size and strength, killed some of the enemy by trampling them under their feet, and crushing their armour and their bones, while upon others they inflicted a terrible death, for they first lifted them aloft with their trunks, which they had twined round their bodies, and then dashed them down with great violence to the ground. Many others they deprived in a moment of life by goring them through and through their tusks. But the Macedonians heroically bore the brunt of this dreadful onslaught, and having killed with their long pikes the men stationed between the elephants, made the poise of the battle equal. They next assailed the animals themselves with a storm of javelins, thus piercing them with numerous wounds, which so tortured them that the Indians mounted on their backs lacked sufficient strength to control their movements,[94] for the animals on heading to their own ranks bore against them with an impetuosity not to be repressed and trampled their own friends under their feet."[95]

In the kingdom of Magadh, Mahāpadma Nanda had collected a huge contingent, numbering about four thousand "all trained and equipped for war".[96] Shortly afterwards Chandragupta Maurya increased the strength of the Magadhan elephant corps to nine thousand.

MAURYAN ELEPHANTRY:

Kauṭilya[97] classified the elephants on the basis of their utility *viz.*, those meant for peaceful traffic and those for warlike services. The war-elephants were trained in *upasthāna* (jumping over fences, robes, etc.), *saṁvartana* (leaping over pits), *samyāna* (moving forward), *vadhāvadha* (trampling down and killing), *hastiyuddha* (fighting with other elephants), *nagarāyaṇa* (assailing forts and citities) and *saṅgrāmika* (other cognate movements relating to war).[98] About the war-accoutrements of the elephants, he says, "A hook, bamboo and machines (*yantra*) are instruments. Necklaces such as *vaijayantī* and *kṣhurapramālā* and litter and housings are the ornaments of the elephants. Mail armour (*varma*), *totra,* arrow-bags[99] and machines are war-instruments"[100]

ELEPHANTRY IN THE POST-MAURYA PERIOD:

During the post-Maurya period, wherever possible, elephants were maintained at enormous strength. In some of the early Buddhist works it is recorded that the war-elephants were protected with leather armour and their tusks were tipped with metal spikes.[101] It is also mentioned that the elephants were clad in girths and caparisons and the *mahāuts* (*gāmaṇīs*) were armed with spikes and hooks (*tomarāṅkusha*) to urge and direct the beast. The tremendous havoc that this armoured beast did in the battle is thus described "winding his trunk about the shafts of the pillars he tore them like so many toad stools; he beat against the gateways, broke down the bars and forging his way through entered the city and won it for its king".[102]

On the authority of *Dantabhūi Sūtta*, S.D. Singh outlines the following details about training of war-elephants. "He (elephant trainer) ties a shield to his trunk, a man holding lance sits on the elephant's neck, while others holding lances stand on all sides. The elephant-tamer stands in front,

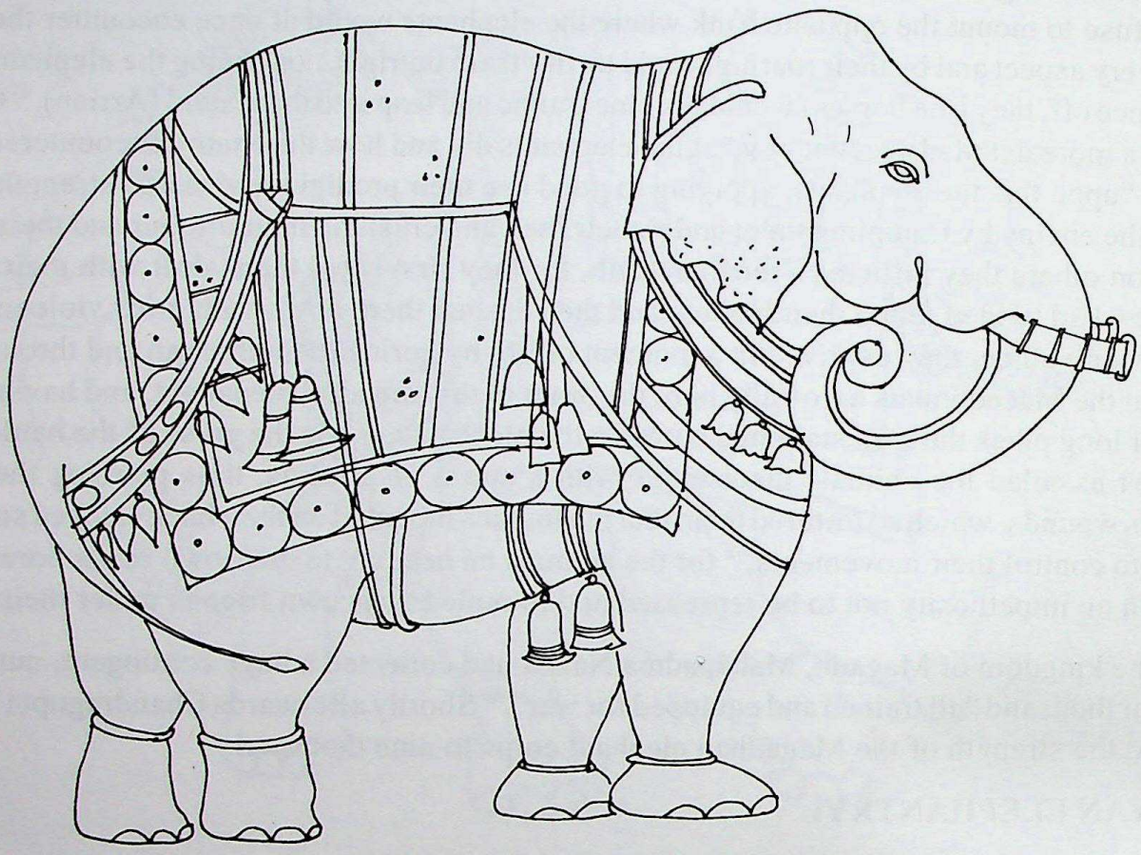


Fig. 77 A royal elephant with its tusks protected with tusk-covers, neck with *haikala* (chains), body with thick quilted *jhūla* and hind part with ropes. One *beḍī* (ankle) is seen on each of the four feet and the bells are tied all over.

holding a stout lance. The animal refuses to budge while standing his ground. The king's elephant endures blows of sword and axe, arrow and hatchet and the deafening din of drums and kettle-drums, conch and tom-tom. He is like burnished gold purged of all its dross..."[103].

ELEPHANTRY DURING GUPTA AND POST-GUPTA PERIOD:

In the *Raghuvaṁsha*,[104] while describing the campaigns of Raghu, Kālidāsa speaks of the mighty elephant forces of the Kalinga and Aṅga kings. Vākpati refers to the Vaṅga king possessing a large number of war-elephants.[105]

Kalhaṇa records that the King Harṣha was fighting against Uchchala. "Then Janakachandra and others shot arrows at the King's fighting elephant, which stood in front of the bridge (on the stream called 'Kshiptika') and had thrown off its armour. Hit in the joint by the arrows, the elephant raised a trampling roar, and turning back, trampled with his feet his own men. Attacked by the elephant which had turned hostile, as fate (had done), the foot and the horse of the (Harṣha's) army were routed".[106]

Māgha mentions bowmen discharging their arrows from the back of the armoured elephants.[107] The author of *Khajurāho Inscription* (No. 11), while narrating the contest of Jashōvarmana says "by shower of enraged irresistible archers, standing on mighty infuriated beasts, fully caparisoned, that were marching along like towering Anjana mountains."[108] The Kurram Plates of Pallava Paraméshvaravarman I describe "heroes holding bows and riding mighty elephants".[109]

It may be of interest to note that the elephants were not only the favourites of Indian rulers but also captivated the attention of Muslim invaders. Mahmūd Ghaznī prized them most and they were treated as a rare booty.[110] He raised a mightly force of 1300 war-elephants.[111] Once annoyed with Caliph Al Qādir Billāh of Khorasan, Mahmūd wrote, "Do you wish me to come to the capital of the Caliphate with a thousand elephants, in order to lay it waste and bring its earth on the backs of my elephants to Ghaznīn."[112]

ELEPHANTRY DURING THE DELHI SULTANATE:

The warrior of many a historic actions did not lose his reputation with the passage of time. In siege, it continued to serve as a "battering ram" and as "rank breaker when furiated".[113] Balban considered that 500 horsemen were equal to one elephant. Alāuddīn Khaljī considered them indispensable.[114] Muhammad Tughluq had 3000 war-elephants. In 1361 A.D. Firūz Tughluq attacked Sind.[115] The kingdom of Jājnagar in Orissa was known for the abundance of elephants which lured Firūz Shāh to an extent that in A.H. 762 (1361 A.D.), while returning from his second expedition to Lakhnawatī, he invaded this land only for the elephants.[116] The Rāi of Jājnagar, being unable to face Firūz Tughluq, surrendered all his elephants to the Sultān, retaining only one for himself to maintain his title of 'Ḍajapati' (the lord of elephants').[117]

In 1399 A.D. Timūr invaded India. Sultān Mahmūd drew up his forces in defence of Delhi. His army was composed of forty thousand foot, ten thousand horses and 125 elephants completely covered with armour, carrying *howdāhs* in which were throwers of grenades (*radandāz*), fire works (*ātash-bāz*), rockets (*taksha-andāz*) and arrows.[118]

During the Delhi Sultanate the cavalry was, no doubt, the main source of strength and next in importance was the elephant corps and the Sultāns considered the elephants a valuable asset. The elephants were clad in metal plates and scythes were attached to their tusks, and they carried a number of soldiers in the *howdāh*, beside the *mahāut* on the neck.[119]

The travellers, Nicolo Conti and Nikitin, in the 15th century A.D., mention about the armoured elephants. They say, "Elephants are generally used in battle. The men on foot are sent first. The Khorossamans or the rulers of the country are mounted in full armour for men as well as horses and elephants. Large scythes are attached to the trunks and the tusks of the elephants. They carry a citadel (*howdāh*) and in the citadel sit 12 men in armour with bows and arrows".[120]

ELEPHANTRY DURING THE MUGHAL PERIOD:

Bābur records that the standing army of Ibrāhīm Lodī, his main opponent in India in 1526 A.D., consisted of one lakh foot and one thousand elephants.[121] Later the elephants formed the part of the Mughal force and on the 12th December, 1528 A.D., Bābur had presented, among many other items, ten war-elephants with accoutrements to Askarī, his son.[122]

In 1556 A.D., the forces of Hémū challenged Akbar at Pānīpat. Hémū was riding an elephant called 'Hawāi' who was fully protected.[123] Suddenly an arrow struck one of the eyes of Hémū and came out at the back of his head. Hémū fell down from his *howdāh* and the fate of the battle was decided in favour of the Mughals. Akbar (1556-1605 A.D.) employed elephants in many battles. These were completely protected with armour and apart from the generals and their standards these beasts carried heavy guns on their backs. These guns were called *gajnāls*.

In the twelfth regnal year (1617 A.D.) of Jahāngīr, Shāh Jahān, then a prince, presented several items to his father (Jahāngīr) together with many elephants. One of them was 'Sarnak' which was so beautiful that the Emperor himself drove it and took it to his private palace.[124] In the thirteenth regnal year Prince Parviz, the son, presented a war-elephant named 'Kuh-daman' to Jahāngīr.[125] An elephant with trappings was conferred on Muqarrab Khān at the time of his being appointed the Governor of Bihar by Jahāngīr in the fourteenth regnal year (1619 A.D.)[126] In the fifteenth regnal year was conferred upon Khān Jahān Lodī, when he was appointed the Governor of Multan, a special elephant with trappings.[127] In the sixteenth regnal year a very special elephant called 'Gaj Ratan' with trappings was presented to Khān Jahān.[128] In 1623 A.D. (eighteenth regnal year) Nūr Jahān bestowed upon Prince Parviz an armoured elephant.[129]

On Saturday, the 15th February, 1662 A.D., eighty war-elephants were presented by Prince Shujā to Emperor Aurangzéb.[130] On Saturday, the 29th July, 1671 A.D., Hushdār Khān was appointed the *nāzim* of Burhanpur and was given an elephant with bronze trappings.[131] A tall war-elephant with silver trappings was presented to Muhammad Amīn Khān on Friday, the 15th September, 1617 A.D., when he was sent to Kabul as *Subedār*.[132] The elephant with gold trappings was given to Prince Muhammad Muazzam on Saturday, the 11th January, 1673 A.D., when he was sent to Kabul as *subedar*.[133] On Wednesday, the 18th September, 1678 A.D., Prince Shāh Ālam Bahādur with a vast army was sent to govern the provinces of Deccan and was presented with a special robe with jewelled *balaband*, a pearl necklace, a *jīgha*, one lakh of *ashrafīs* (gold coins) in

cash and three elephants with gold *sāz* (trappings).[134]

MARĀTHĀ ELEPHANTRY:

The Marāthā army, in the later days, was encumbered by a large number of animals including the elephants deemed unnecessary in Shivājī's time. The elephants, proud of their distinguished elevation, appropriated to war or some honourable service or covered with caparisons of embroidered velvets and scarlet cloth, decorated with gold and silver fringe, were destined to carry the *howdāhs* of Rāghōbā and his chief officers.[135]

Besides the infantry and the cavalry, the Marquis of Alorna also mentions the employment of war-elephants by the Marāthās.[136] "The elephants, "says he, "taught and trained for war are of the greatest value to the Hindus, when they are intrepid and not afraid of noise. Princes, generals and distinguished persons mount them; they are used to attack the enemy carrying different platoons of men armed with bow and arrow. When infuriated they cause great harm with the trunk".[137]

ELEPHANTRY DURING 18TH-19TH CENTURIES:

Nizām-ul-Mulk of Hyderabad seems to have maintained a large number of elephants even so late as about 1730-31 A.D. When on a campaign to the north of his dominions, in the direction of the Tāptī, he had with him 1026 elephants of which 225 were provided with armour.[138]

The Mughal army consisted of 2000 fighting elephants covered with armour in 1739 A.D., when Nādir Shāh invaded India. In order to baffle the elephants, on which the Indians mostly relied for effect, Nādir Shāh caused a number of platforms to be made and fixed each across with two camels. On these platforms he laid *naphthā* and a mixture of combustibles with orders to set them on fire during the battle. The war-elephants were sure to flee away at the sight of the quickly approaching fire and put the Indian army behind them in disorder.[139] Nādir himself wondered at the Indian habit of mounting the general on an elephant. He exclaimed, "What strange practice is this that the rulers of Hind have adopted? In the day of battle they ride on an elephant and make themselves into a target for everybody".[140]

CONCLUSION:

The elephants were used to batter in the gates of fortified places. It is for this reason that such gates are generally found protected by metal plates and spikes. To counteract these, the elephant was again, in its turn, provided with a frontlet of steel. We find an instance at Arcot in 1751 A.D. when "the parties who attacked the gates drove before them several elephants who, with large plates of iron fixed to their foreheads, were intended to break them down; but the elephants wounded by the musquetry soon turned and trampled those who escorted them".[141]

Āsaf-ud-daullā, the Nawāb of Oudh (1775-1797 A.D.), kept considerably above 1000 elephants. During the Second Sikh War (1848-49 A.D.) the East India Company had employed several elephants. The 'elephant battery' was commanded by Sir Richard Shakespeare. In the battle of Chilliānwall (13th January, 1849 A.D.), the elephant battery was under the command of Major Howell Paynter.

Thus this colossus of a beast, presenting terrifying appearance for the troops unused to him and heralding the superiority of Indian arms assumed significance disproportionate to its real utility as an instrument of war. For this woeful reliance placed on him the Indian knights had to pay heavily time and again.[143] It was a paradox that the Muslims whose victorious cavalry marched over the dead bodies of elephants made them the symbol of glory and grandeour of Mughal court.

References

1. S.K.Bhakari, *Indian Warfare* (New Delhi, 1981), p. 62.
2. Kauṭilya, *Arthashāstra*, Book II, chapter XXXII, says "Marching in the front; preparing the roads, camping ground and paths; forced entrance into the impregnable places; setting or quenching the fire; subjugation of one of the four constituents of the army; trampling down the enemy's force; frightening and driving it; magnificence; seizing; abandoning; destruction of walls, gates and towers and maintaining the treasury and the kingdom constitute the work of the elephants".
3. Pālakapya, the famous author of *Hastyāyurveda,* says, "The Suméru (mountain) is the ornament of the world, the moon is of the night, learning is the ornament of the man, and the elephant of the army", *vide, Hastyāyurveda* published in the Anandashram Sanskrit Series (1894), ch. I, sec. V, *shlokas* 23 and 29.
4. The *Kāmandakī ya*, XVI. 10-12; *Agni Purāṇa*, 287, 5-6; *Shāraṅgadhar Paddhati* (ed. Peterson), p. 249, join their voice to this general chorus of tribute.
5. K.K.Handiqui, *Yashatilak and Indian Culture* (Sholapur, 1949), pp. 110-111.
6. The earliest known historical instance of this kind occurred in the battle of Hydaspes. Maddened by the wounds received from Macedonian arrows and spears, the elephants in the Paurava army attacked friends and foes indiscriminately and spread havoc in their own ranks, *vide*. J.W.McCrindle, *India and Its Invasion by Alexander, the Great* (1896), pp. 106 and 211.
7. John Marshall and Others, *Mohen-jodaro and the Indus Valley Civilization* (London, 1931), vol. II, p. 653.
8. *Cf., Indian Archaeology - A Review 1960-61*, pl. XLVIII, B.
9. E.J.H.Mackay, *Further Excavations at Mohen-jodaro*, 2 vols. (Delhi, 1938), vol. II, pl. IXXIX, 7,8,13; IXXXIV, 57; IXXXVI, 171, depict docile elephants. John Marshall, *op. cit.*, shows an elephant with a manger in front (vol. III, pl. CXII, 369). At Kālibangān in Rajasthan lumps of clay with seal impressions of the image of a horned elephant have been found; the animal looks like being caparisoned with something like a cloth flung across its back. *Cf., The Illustrated London News* (March 24, 1962), p. 454, fig. 1.
10. *Cf.*, Sarva Daman Singh, "The Elephant and the Aryans," *Journal of Royal Asiatic Society* (1963), parts 1 and 2, pp. 1 ff.
11. Stuart Piggot, *Prehistoric India* (Harmondsworth, 1950), p. 157.
12. *The Cambridge History of India*, vol. 1 p. 81, says that the elephant appears in the *Rigveda* as wild beast and there is no trace of its use in war. V.R.R.Dikshitar, *War in Ancient India*, 2nd ed. (Madras, 1948), p. 167, admits the use of elephants in war in the Vedic period but he does not cite any textual evidence.
13. *Rigveda*, I. 64.7; IV.16.14; IV. 4.1; VIII. 33.8.
14. *Ibid.*, X.40.4.
15. *Ibid.*, IV. 4.1 याहिराजेवामवाम् इभने" *Cf.*, U.N.Ghushal, "Kingship in *Rigveda*", *Indian Historical Quarterly*, No. 20 (1964), p. 37.
16. *Ibid.*, IX. 57.3. *Rigveda*, XX. 106.6 has श्रणेव जरभरी तुरफरीत नैतोशेव तुरफरी परफरीका" which has been translated

by Wilson as "two elphants bending their fore-quarters and smitting the foe".

17. S.D. Singh, *Ancient Indian Warfare with Special Reference to the Vedic Period* (Leiden, 1965), p. 76.

18. *Atharvavéda*, III. 22.6; हस्तिमृगानाम् सुषदामतिष्ठानवान्बभूव हि''; IV. 36.9, हस्तिनम् मशका इवः'' VI.70.2 यथा हस्ति हस्तिन्यायः पदेन पदमुद्युजे'' *Cf.*, R.T.H.Griffith, *The Hymns of the Atharvaveda* (tr.), 2 vols. (Benaras, 1916-17), vol. I (second edition, 1916), p.116.

19. The word *hastipa* is mentioned in the *Vājasaneyī Saṁhitā*, XXX.II; *Taittirīya Brāhmaṇa*, III. 4.9.1 *Cf.*, *Cambridges History of India*, vol.I, p. 137. The *Vājasaneyī Saṁhitā* (XXIV. 29) mentions the sacrifice of elephants.

20. *Aitaréya Brāhmaṇa*, VIII.22.

21. *Ibid.*, VII.23.

22. *Sāma Vidhāna Brāhmaṇa*, III. 6.11; ''हस्त्यश्वरथपदायतयः''

23. *Chāndogya Upaniṣad*, VII. 24.2; *Cf., Kaṭhaka Upaniṣad*, I.1.23, ''बहून पशून हस्ति हिरण्यमश्वान्''

24. S.D.Singh (1965), *op. cit.*, p. 78.

25. *Rāmāyaṇa, Bāla-Kāṇda*, Book I, Canto 6, lines 24-26;
ऐरावतकुलीनैश्च महापद्म कुलैस्तथा ।
अन्जनादपि निष्क्रान्तैवभिनादपि च द्विपैः ॥
भद्रैर्मन्द्रैर्भृगैश्चैव भद्रमन्द्र मृगैस्तथा ।
भद्रमन्द्रैभद्भृगैर्मृगयन्द्रैश्च सा पुरी ॥

26. *Ibid., Bāla-Kāṇda*, Canto XXXVIII, lines 13-23.

27. *Ibid., Ayodhyā-Kāṇda*, Canto LXXXIII, line 3:
नवनागसहस्राणि कल्पितानि यथाविधि ।
अन्वयुर्भरतं यान्तभिक्ष्वाकुकुलनन्दम् ॥

28. *Ibid., Araṇya-Kāṇda*, Canto XXVII, line 24:
तं चतुर्भिः खरः क्रुद्धो रामं गात्रेषु मार्गणैः ।
विन्याध हृदि मर्मज्ञो मातङ्गमिव तोमरैः ॥

29. *Ibid., Sundar-Kāṇda*, Canto VI, line 32:
कुलीनान् रुपसम्पन्नान गजान् परगजारुजान् ।
शिक्षितान् गजशिक्षायामैरावतसमान युधि ॥

30. *Ibid., Kalyāṇa-Kalpataru*, Canto XXXVII, line 24:
''तद्भवांश्चतुरङ्गेण बलेन महता वृतम''

31. *Ibid.*, line 16:
गजानां दशसाहस्रं रथानामयुतं तथा ।
हयानामयुते द्वे च साग्रकोटिश्च रक्षसाम् ॥

32. *Ibid., Kalyāṇa-Kalpataru*, Canto XLIII, line 2:
ते हयैः कान्चनपीडैर्गजैश्चाग्नि शिखोपमैः ।
रथैश्चादित्यसंकाशैः कवचैश्च मनोरमैः ॥

33. *Ibid., Kalyāṇa-Kalpataru*, Canto LIII, line 10, 11:
गजामदोत्कटाः शूराश्चलन्त इव पर्वताः ॥
and ते यद्धकुशला रुढास्तोमराङ्कुशपाणिभिः ॥

34. *Ibid.*, *Kalyāṇa-Kalpataru*, Canto LIX, line 12:
नानापताकाध्वजछत्रजुष्टं प्रासासिशूलायुधशस्त्रजुष्टम् ।
कस्येदमक्षोभ्यमभीरुजुष्टं सैन्यं महेन्द्रो पमनागजुष्टम् ॥

35. *Ibid.*, *Ayodhyā-Kāṇda*, Canto I, line 28, "आरोहे विनये चैव युक्तो वारण वाजिनाम्"

36. *Ibid.*, *Ayodhyā-Kāṇda*, Canto C, line 50.

37. E.W.Hopkins, *op.cit.*, pp. 209-11, The common names for the elephants used in the Epics are *gaja, nāga, dvīpa, hastin, karéṇu, karenu, dantin, dvirada, mātanga, kunjara, varṇa, pota*, etc.

38. *Mahābhārata*, VI.55.25.

39. *Ibid.*, XVI. 7.36.

40. E.W.Hopkins, *op.cit.*, p. 209.

41. It required a special skill to train and then become the master of an elephant. This elephant science was called *gajashikshā* (*Mahābhārata*, I. 109.19), or *hastin-shikshā* (*Mahābhārata*, VIII.38.16). In the same Epic (VII. 87.19) "the harnessed and cruel elephants are described as ridden well". Dhṛitrāshtra, Pāndu and Vidura learnt how to manage the elephants during the course of their military training (*ibid.*, I.102.17). Arjuna was, similarly, taught by Droṇa as how to fight from the back of an elephant (*ibid.*, I. 123.7). King Dushayanta was skilled rider of elephants (*ibid.*, 1.62.12).

42. It was probably first customary in peaceful jaunts, and then extended to war.

43. *Cf., Mahābhārata*, I. 69.13.

44. *Ibid.*, VI. 20.7.

45. *Ibid.*, VI. 91.23, 23; VI. 95.33 ff; VI. 17.36; V. 164.38; VII. 26.19 ff. In IV. 65.6, also we find a Kaurava prince on an elephant in war but the beast was slain forthwith by one arrow in the forehead.

46. *Mahābhārata*, VI. 17.20.

47. *Ibid.*, IV.60.7, "रथैश्चतुर्भीरगजपादरक्षैः"

48. *Ibid.*, VIII. 8.21.

49. *Ibid.*, VII. 35.34, 35. Elephants were killed with *nārāchas* (*Cf.*, VI.67.35). Bhīma killed them with mace and sword (III.255.7; VI.50.34 ff). Arjuna could destroy an elephant with a stake of iron "शूलाग्रेणेव कुन्जरम्" (III, 40.38).

50. *Mahābhārata*, XII. 137.35, refers to the catching of wild elephants with the help of tame she-elephants.

51. *Ibid.*,

52. *Ibid.*, 'सर्वशब्दक्षमायुधि'

53. *Ibid.*, 'सर्वे च पुरभेत्तारो'

54. *Ibid.*, II. 49.7; IV. 12.20; IV.30.26. Today, however, an elephant in India is considered to be at the height of his powers between the age of 25 and 40. Elephants aged 80 are also said to have been used in war or for tiger hunt since they are more experienced and matured.

55. *Ibid.*, VI.1.26 ff.

56. *Ibid.*, VI.43.79.

57. *Ibid.*, IV. 60.7.

58. *Ibid.*, VII. 27.24 ff.; VI.99.24.

59. *Ibid.*, VII. 25.43. The water may have been carried originally in a leather bucket on the back of the elephant.

60. *Ibid.*, VII. 25.49.

61. *Ibid.*, VI. 44.13-15.

62. A short javelin thrown by hand. *Cf.*, S.D.Singh (1965), *op.cit.*, p. 109.

63. S.D.Singh (1965), *op.cit.*, p.84.

64. *Mahābhārata*, IV. 63.25. The ruler of the Matsya asked a bellman to ride an elephant through the city and announce his victory at the crossroads.

65. *Ibid.*, V. 164.38, etc.

66. *Ibid.*, 46.13; four in IV. 65.6. These were the knights in chariots supporting a prince who rode an elephant.

67. *Ibid.*, VI.81.14.

68. The elephants wore a *kakshyā* about the middle and carried flags. There were rings about the feet. Compare *Mahābhārata*, VIII. 85.4, etc.

69. *Ibid.*, XII. 100.7-8. Compare *Rāmāyaṇa*, VI. 111.10.

70. *Mahābhārata*, VII. 36.34; VI. 20.7. The *graiveyāṇi* (necklaces) were probably for use as well as ornaments.

71. *Ibid.*, VI. 57.26; VIII. 24.64, etc.

72. *Ibid.*, I. 221.54. Gold girdles and flags are also referred to in the *Rāmāyaṇa*, II. 101.35. Compare *Mahâbhārata*, VI. 60.4.

73. The famous elephants all had names, the most reputed being Indra's 'Airāvata'. The elephant of Kubéra was called 'Sarvabhauma'. This pratice continued throughout. Akbar's favourite elephants were 'Āsamān Shukoh' (Heaven's dignity), 'Dalsingār' (Ornament of the army), 'Aurang Gaj' (Throne elephant) and 'Fateh Gaj' (Victory elephant). The renowned elephants mentioned in the *Tuzuk-i-Jahāngīrī* are 'Ratanganj' (a jewel, tr. p. 140), 'Futuh' (Unrivalled in fighting, tr. p. 151), 'Takht-i-bakht' (Throne of fortune, tr. p. 170), 'Gajpat' (King of elephants, tr. p. 211), etc. The elephant ridden by Nādir Shāh after his victory in Delhi in 1739 A.D., was named 'Mahāsundar' (King of beauty).

74. *Amarkosha*, 1.12.5., describes the reputed elephant.;
ऐरावतः पुण्डरीको वामनः कुमुदो अन्जनः ।
पुष्पदन्तः सर्वभावमः सुप्रीत सुप्रतीकश्च दिग्गजाः ॥
compare *Agni Purāṇa*, 19.27. In the *Mahābhārata*, VII. 190.17, is said, "अश्वथामेतिहि गजः ख्यातो नाम्नाः"

75. *Cf.*, *Bhīshma Parva*, 57.13; *Karṇa Parva*, 22.5; *Shishupālavadha*, XVIII.

76. *Mahābhārata*, 6.55.29.

77. *Ibid.*, 7.29.39. Such statements must be taken with latitude that Epic longitude demands.

78. *Ibid.*, 4.60.8. "आकर्णपूरेण दृढ़ायसेन बाणेन"

cf., ibid., 7.28.37 ff.

79. *Dīgha Nikāya*, III. 200; *Majjhima Nikāya*, III.173, 174, 176; *Saṁyutta Nikāya*, 1.73.84; *Aṅguttara Nikāya*, III.151. 157-8, 159, 160, 162, 397, etc.

80. *Vinaya*, I, 241, 342; II; 182; IV, 105.

81. *Ambattha Sūtta* of the *Dīgha Nikāya*, I.103, mentions a king seated on the back of his elephant.

82. *Dīgha Nikāya*, I.49.

83. *Majjhima Nikāya*, II, 112; *Aṅguttara Nikāya*, III. 345, mentions 'Seta' as another war-elephant of Prasénjit.

84. *Majjhima Nikāya*, II.69.

85. *Ibid.*, II. 94

86. *Ibid.*, III. 132, 133.

87. S.D.Singh (1965), *op. cit.*, p. 79.

88. *Aṅguttara Nikāya*, III, 157-162.

89. *Ibid.*, III. 161. "नागो सोता च होती हन्ता च रक्षिता च खन्ता च गन्ता च" There is no indication in the *Nikāyas* or the *Vinaya* of the Epic rule that the elephant should fight only an elephant.

90. *Vinaya*, IV. 105, *cf.*, *Sacred Books of the Buddhists*, vol. XI, p. 375, *f.n.* 4.

91. *Saṁyutta Nikāya*, IV. 310. *cf.*, *Majjhima Nikāya*, I. 340, refers to Pessa, the son of an elephant-trainer, who could give all kinds of training to an elephant.

92. Porus, according to Diodorus, had 130 war-elephants. He says, "It very much gave the appearance of a city, the elephants as they stood resembling its towers, and the men at arms placed between them resembling the line of wall intervening between tower and tower", quoted by Arjan Dass Malik, *Alexander, the Great*, p. 102.

93. *Cf.*, Arjan Das Malik, *op. cit.*, pp. 103-4.

94. McCrindle, *India and its Invasion by Alexander, the Great*, (1896), pp. 209 and 224. Alexander is said to have remarked to Koenos that the assistance of the elephants "is not of a kind to be depended upon" and that he was "fully convinced that they do more harm to their own side than to the enemy".

95. Arjan Dass Malik, *op. cit.*, pp. 108-9. Porus himself was riding a tall and handsome elephant who protected him till the last even after the Master (Porus) was wounded and the animal himself was badly injured.

96. McCrindle, *Ancient India as Described by Megasthenese and Arrian* (1926), p. 34.

97. Kauṭilya, *Arthashāstra*, Book II, chapter 32.

98. *Ibid.*,
सानाह्यः सप्तक्रियापथः उपस्थानं संवर्तनं।
संयानं वधावधो हस्तियुद्धं नागरायणं साङ्ग्रामिकं च।
तस्योपविचारः कक्ष्याकर्म ग्रैवेयकर्म यूथकर्म च ॥

99. Some arrows during the Mauryan period were said to be as long as nine feet. The problem as to how such long arrows were carried is partly solved by the reference of 'arrow-bags'. These were evidently large bags hung from the elephant *howdāhs* to contain extra supplies of arrows, *vide.*, G.N.Pant, *Indian Archery* (New Delhi, 1978), p. 171.

100. *Arthashāstra, op. cit.*, Book II, chapter 32.
"तेषां बन्धनोपकणमनीकरथप्रमाणम । आलानग्रैवेयकक्ष्यापारायण परिक्षेपोत्तरादिकं बन्धनम् । अंकुशवेणुयन्त्रादिकमुकपरणम।
वैजयन्तीक्षुरप्रमालास्तरणकुथादिकं भूषणम। बर्मतोमरशरावापयन्त्रादिकः सांग्रामिकालङ्कारः ॥"

101. A.L.Basham, *The Wonder That Was India* (London, 1954), p. 129.

102. R.N. Mehta, *Pre-Buddhist India* (1939), p. 165.

103. S.D.Singh, *Ancient Indian Warfare with Special Reference to the Vedic Period* (Leiden, 1965), p. 79.

104. Kālidāsa, *Raghuvaṁsha*, edited by Gajanana Mahadeva Gurjara (Bombay, 1905), IV. 40.43; VI. 27.54.

105. Vākpati, *Gauḍāvāho*, edited by Shanker Pandurang Pandit, Bombay Sanskrit Series, No. XXXIV (Bombay, 1887), Introduction XXVI.

106. Kalhaṇa, *Rājataraṅgiṇī*, VII. 1551-55.

107. Māgha, *Shishupālavadha*, edited by Pandit Durga Prasad and Pandit Shivadatta; revised by T.Srinivasa Venkatarama Sarma (Bombay, 1923), XVIII. 9.24.39.

108. *Epigraphia Indica*, I, p. 132.

109. *Ibid.*, XVIII, p. 343.

110. Elliot and Dowson, *The History of India as Told by Its Own Historians*, vol. II. (Allahabad, 1979), p.49.

111. Mahomed Kāsim Ferishtā, *History of the Rise of Mahomedan Power in India till the year* 1612 A.D., tr. from the original Persian by John Briggs, four vols. Ist edition (1829), reprinted (Calcutta, 1966), vol. I, p. 40.

112. Muhammad Habib, *Sultān Mahūmd of Ghaznī*, second edition (Delhi, 1951), p. 35. It was not in India alone that the elephants were used in war. The same practice was in vogue among the Greeks and the Romans, the Turks and the Mongols. Seleucas Nikator had received a gift of five hundred war-elephants from Chandragupta Maurya and these were used in war against Antigonus, the Syrian king, in 301 B.C. Many centuries later Sultān Mahmūd used the Indian elephants in his wars against the Turks in Trans-Oxiana; *vide*, P.C.Chakravarti, *The Art of War in Ancient India* (Dacca, 1941), p. 51.

113. S.K.Bhakari, *op. cit.*, p. 68.

114. Amīr Khusrau, *Khazainul Futuh* or *the Campaigns of Alāuddīn Khiljī*, tr. into English with notes by Muhammad Habib (Madras, 1931), p. 9. Khusrau says that the Sultān ordered huge armoured elephants to be weighed in boats, and the gold-bricks used in weighing them were given away to the poor.

115. J.M.Banerjee, *History of Firūj Shāh Tughluq* (New Delhi, 1967), p. 37.

116. *Ibid.*, p. 41.

117. *Ibid.*, p. 42; *cf., Inshāi Mahrū* (Allahabad University manuscript), p. 43.

118. Elliot and Dowson, *op.cit.*, vol. III. p. 493.

119. U.N.Day, *The Government of the Sultanate* (New Delhi, 1972), pp. 142, 156.

120. *Vide*, W. Egerton, *Indian and Oriental Armour*, reprinted (London, 1068), p. 18.

121. A.S.Beveridge (tr.), *Bābur-nāmā*, reprinted (New Delhi, 1970), p. 403; *Bābur-nāmā*, folio 261. On folio 275 (tr. page 489), Bābur says that the war-elephants could drag the huge cart of the mortar (*qazan*) which otherwise took five hundred men to haul.

122. *Ibid.*, tr. p. 628; folio 351. The other items of present included a jewelled dagger and belt, a royal dress of honour, horse-tail standard, flag, drum, ten *tipūchāq* horses, a string of camels, etc.

123. *Tuzuk-i-Jahāngīrī*, translated by Alexander Rogers and Henry Beveridge, reprinted (Delhi, 1968), vol. I, p. 39.

124. Other noted elephants were 'Nūr-bakht' which was worth 1,25,000 rupees; the second 'Mahīpati' was

valued at 1,00,000 rupees (who was later renamed as 'Durjansāl'); third was 'Bakht-buland' also valued at 1,00,000 rupees (renamed as 'Giran-bar). Others were 'Qaddus Khān' and 'Imām Riza', each was valued at one lakh rupees, *vide*, tr. *op. cit.*, vol. I, p. 400a. Jahāngīr remembers that in the elephant stables of Akbar, his father, the largest elephant was 'Durjansāl' whose height was 8 yards and 3 fingers and the largest elephant in Jahāngīr's stable was 'Ālam Gajrāj' whose height was 7 yards and 7 fingers.

125. *Ibid.*, vol. II, p. 70.

126. *Ibid.*, vol. II, p. 89.

127. *Ibid.*, vol. II. p. 191.

128. *Ibid.*, vol. II, p. 209.

129. *Ibid.*, vol. II, p. 260.

130. Sāqi Mustād Khān, *Māssir-i-Ālamgīrī* tr. and annotated into English by Jadunath Sarkar (Calcutta, 1947), p. 23.

131. *Ibid.*, p. 68.

132. *Ibid.*, p. 69.

133. *Ibid.*, p. 76. The gold trappings were worth 5000 rupees. Among the other items the Prince received a robe of honour with half-sleeves, a pearl necklace and one lakh of ruppes in cash.

134. *Ibid.*, p. 105.

135. S.N.Sen, *Administrative System of the Marāthās*, third edition (Calcutta, 1976), p. 284.

136. Shivāji's army was certainly not accompanied by these enormous brutes and we have no proof of their presence in the camp of Shambhājī and Rājārām. Shāhū and his principal officers were mounted on stately elephants during their show and pompous march to Miraj and both Sadāshiv Rāo and Vishwās Rāo directed the Marāthā operations at Pānīpat (1761 A.D.) seated on caparisoned elephants.

137. Quoted by S.N.Sen, *The Military System of the Marāthās*, reprinted (Bombay, 1958), p. 76.

138. William Irvine, *The Army of the Indian Moghuls*, reprinted (New Delhi, 1962), p. 180.

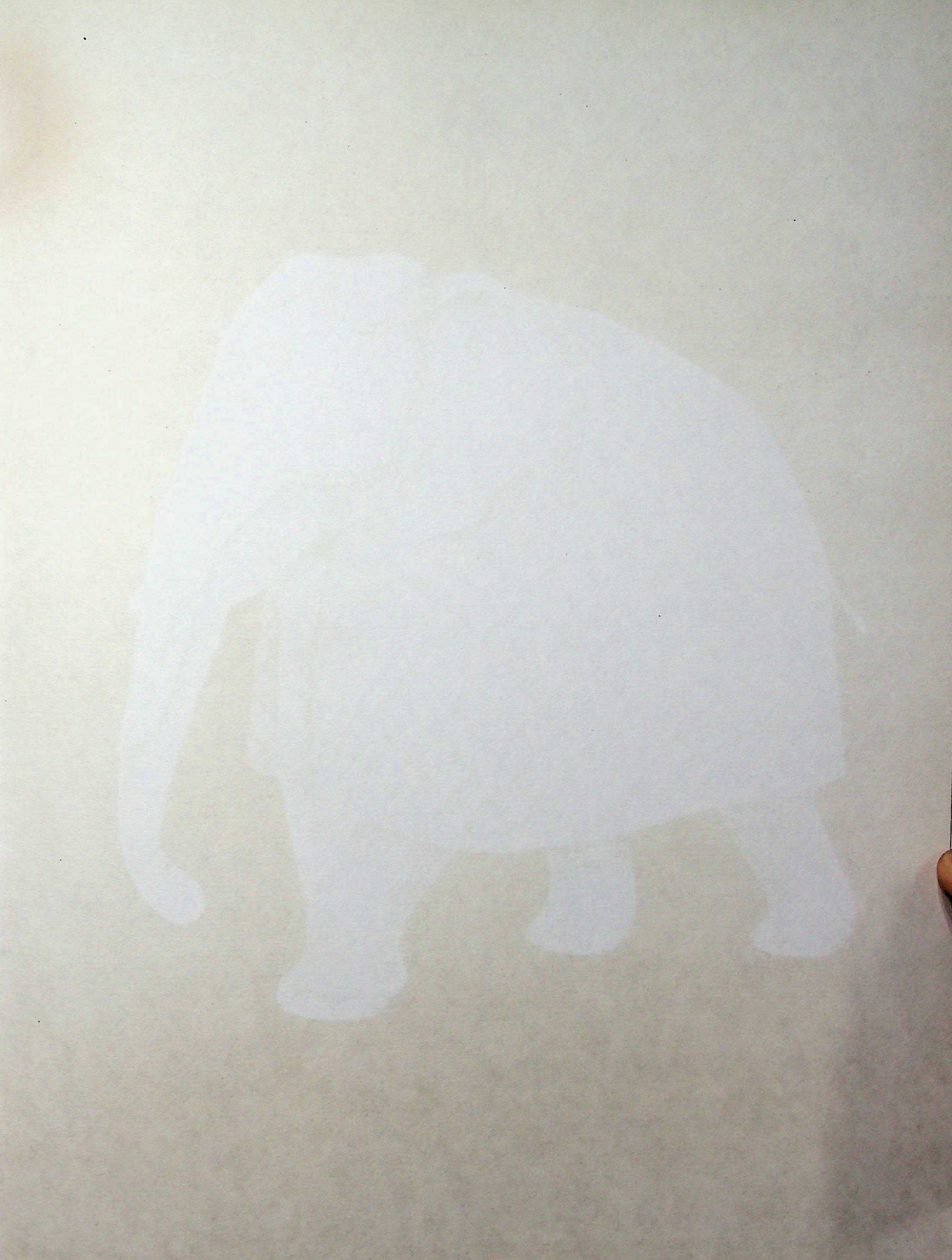
139. Jadunath Sarkar, *Nādir Shāh in India*, reprinted (Calcutta, 1973), p. 48.

140. Dalpat Singh, *Malahat-i-maqal*, manuscript No. 1828 (dated A.H. 1181) in the British Museum, London, folio 54b.

141. *Cf.*, William Irvine, *op. cit.*, pp. 177-8.

142. Joseph Thackwell, *Narrative of the Second Sikh War in 1848-49*, reprinted (Delhi, 1978), pp. 63, 131.

143. S.K.Bhakari, *op. cit.* p. 69.



6
Elephant Armour and Harness

INTRODUCTION :

Unlike the horse, the elephant was usually ridden by several warriors. Megathenese[1] says that in his time the usual practice was for a war-elephant to carry three fighting-men of whom two shot from the side, while the third from behind. The driver has not been included in it. In the sculptures at Sānchī we find three riders seated on each war-elephant. The same is the case with the frescoes at Ajantā.[2] The *Agni Purāṇa* enjoins that every war-elephant should carry two hook-bearers, two archers and two swordsmen.[3]

HARNESS: (Pls. XL, XLII, L, LI, LIII, LIV)

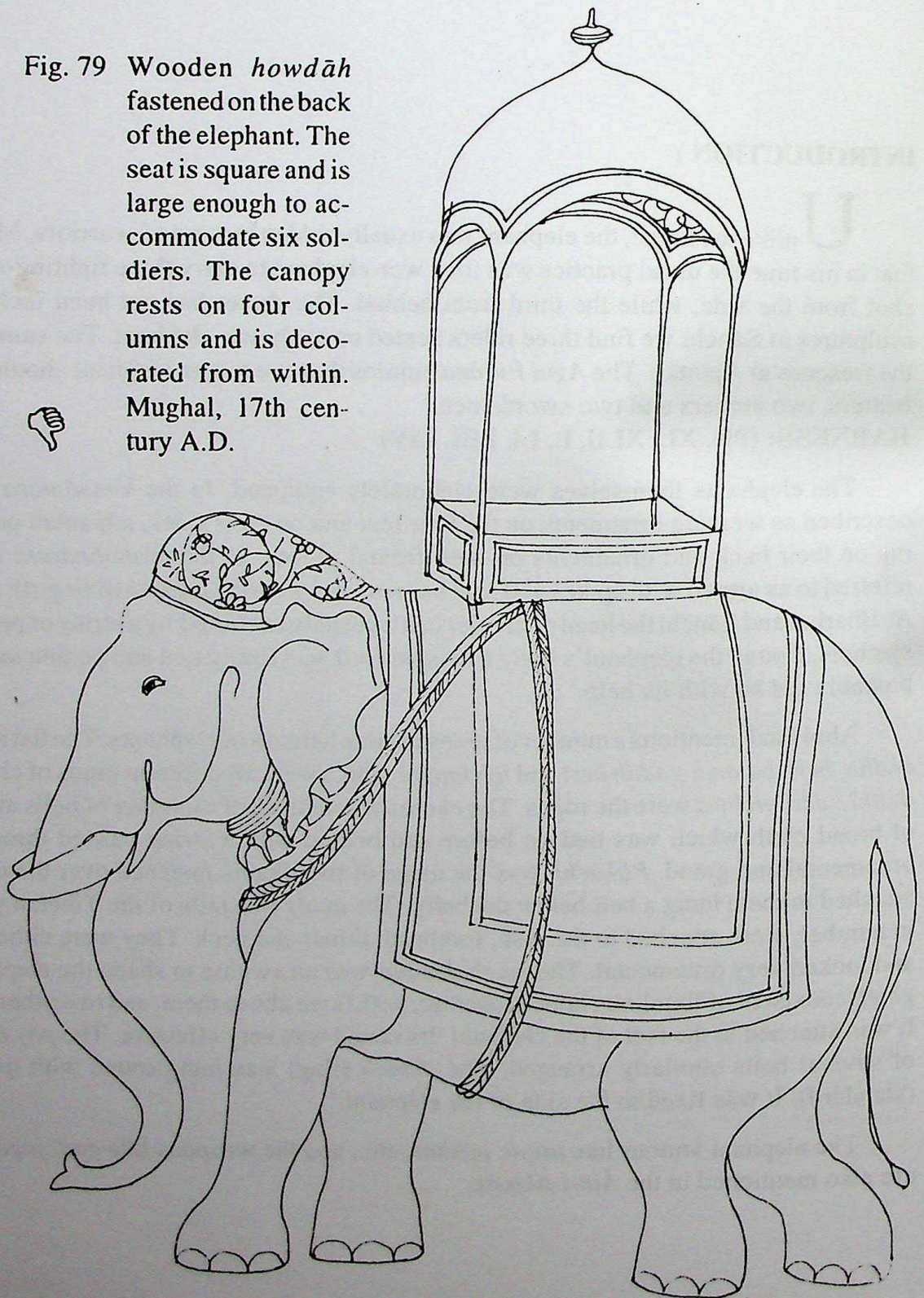
The elephants themselves were elaborately equipped. In the *Vessāntara Jātaka*[4] they are described as wearing ornaments on the four feet and on their sides, a blanket under their belly, a rug on their back and ornaments on their frontal globes. In the *Mahābhārata* the elephants are referred to as armed with spikes and iron harness and wearing a *kakshyā* or girth about the middle. At Bharhut and Sānchī the head of the elephant is usualy encircled by a string of pearls with pendant symbols. Round the elephant's body a twisted cord was firmly tied and people mounting the beast probably did so with its help.

Abul Fazl[5] mentions a number of items used as harness of elephants. The list included *dharna*,[6] *andhu, berī, baland, gaddh berī* and *loh langar* which were all different kinds of chains. The *kilāwā dulthī*,[7] *dōr, pichwā* were the ropes. The *chaurāsī* consisted of a number of bells attached to a piece of broad cloth which was tied on before and behind with a string passed through it. It looked ornamental and grand. *Pitkachh* was the name of two chains fastened over the elephant's sides, attached to them hung a bell below the belly. The *qutas* (the tails of the Tibetan yak), about sixty in number, were attached to the tusk, forehead, throat and neck. They were either black or white and looked very ornamental. The *megh dambar* was an awning to shade the elephant-driver. The *gatelī* consisted of four links joined together, with three above them, and two others over the latter. It was attached to the feet of the elephant. Its sound was very effective. The *pāy ranjan* consisted of several bells similarly arranged. The *jhandā* (flag) was hung round with *qutas* like a *togh* (standard). It was fixed to the side of the elephant.[8]

The elephant armour like *tayyā, pākhar*, etc., and the weapons like *gad, jagawat*, and so on, are also mentioned in the *Āin-i-Akbarī*.

Fig. 78 Elephant-goad. The metallic shaft has a leaf-shaped blade and a curved hook. Rājpūt, 17th century A.D. (National Museum, New Delhi Collection)

Fig. 79 Wooden *howdāh* fastened on the back of the elephant. The seat is square and is large enough to accommodate six soldiers. The canopy rests on four columns and is decorated from within. Mughal, 17th century A.D.



ORNAMENTS: (Pls. XXXIII, L, LI, LIII)

On ceremonial occasions the elephant was given a touch of royalty and decorated with ornaments. The red brocaded covering called *jhūla* or *jhoola* was spread over the elephant's back.[9] The head ornament, often shaped like a crescent, was called *chandā*. Its necklace was termed *haikala* and its crown *mukuṭa*. Its fan-shaped ears were decorated with *gajagāha* and the tail with *dumchī*. The anklets worn on the forelegs were known as *béḍ*. The elephant-goad or *aṅkusha* held by the *mahāut* or driver, controlled its walk (fig. 78).[10]

HOWDĀH: (Pls. LII, LVII)

It has been variously spelt as *haudā, howdā, houdā, howdāh*, etc. The first *howdāh* is referred to in the *Rāmāyaṇa* where it has been called *vimāna*. In the *Mahābhārata* another word *padma* has been used and at one place it has been translated as "eight cornered, eight-pillared saddle" *i.e., howdāh*.[11] The words *vimāna*[12] and *varandaka* were also used in the sense of the *howdāh*. The *howdāh* in the Bharhut and Sānchī[13] is sometimes plain but more often ornamented. The bells were attached to the front corners of the *howdāh* (also called 'housing') but when the *howdāh* was very small, the bells were hung down the elephant's body by means of short ropes, fixed to the *howdāh* itself (fig. 79).

The *howdāhs* depicted in the Gāndhāra sculptures are beautifully embellished with floral designs and are secured by means of ropes.[14]

Bāṇa refers to gaudy *howdāhs* kept tied by means of girth-bands.[15] The *Chāchnāmā* relates how Dāhir, the ruler of Sidh, was observed seated on a lofty *howdāh* by the enemy. "Muhammad-bin-Kāsim told the *napthā*-throwers that the opportunity was theirs, and a powerful man in obedience to this direction, shot his *napthā*[16] arrow into Dāhir's *howdāh* and set it on fire. This produced immediate confusion in the Hindu army and decided the day".[17] A similar incident took place in 1008 A.D. when the combined Hindu army headed by Ānandapāla met the forces of Mahmūd of Ghaznī on the plains of Chāch (lying between Attock and Hazro). The Hindus were about to win the battle but "all of a sudden", says Ferishtā, "The elephant, upon which the Prince was seated in a *howdāh*, became unruly from the effects of the *napthā* balls and the flight of the arrows, turned and fled. This circumstance produced a panic among the Hindus, who seeing them deserted by the general, gave way and fled also."[18]

In the 12th century A.D., the Rājā of Benaras faced Kutubuddīn Aibak. The Rājā came to the field on a lofty *howdāh* but within a short time that *howdāh* caught fire and the Rājā fell down from his exalted seat on the earth.[19]

Abul Fazl has described that in the battlefield a *howdāh* was invariably fastened on the back of the elephant. The seat was generally square and large enough to accommodate four to six soldiers (fig. 79). It was made of wooden planks and covered with metal plates. It was high enough to protect the warriors sitting inside who could see the entire battle ground without being practically seen. In order to fasten it there were loops on both sides.[20] Sometimes it was uncovered while at other times it was protected from sun and rain.[21] The canopy rested on four columns.[22] The *howdāhs* used by the nobles were made completely of silver and were beautifully chiselled with geometrical and

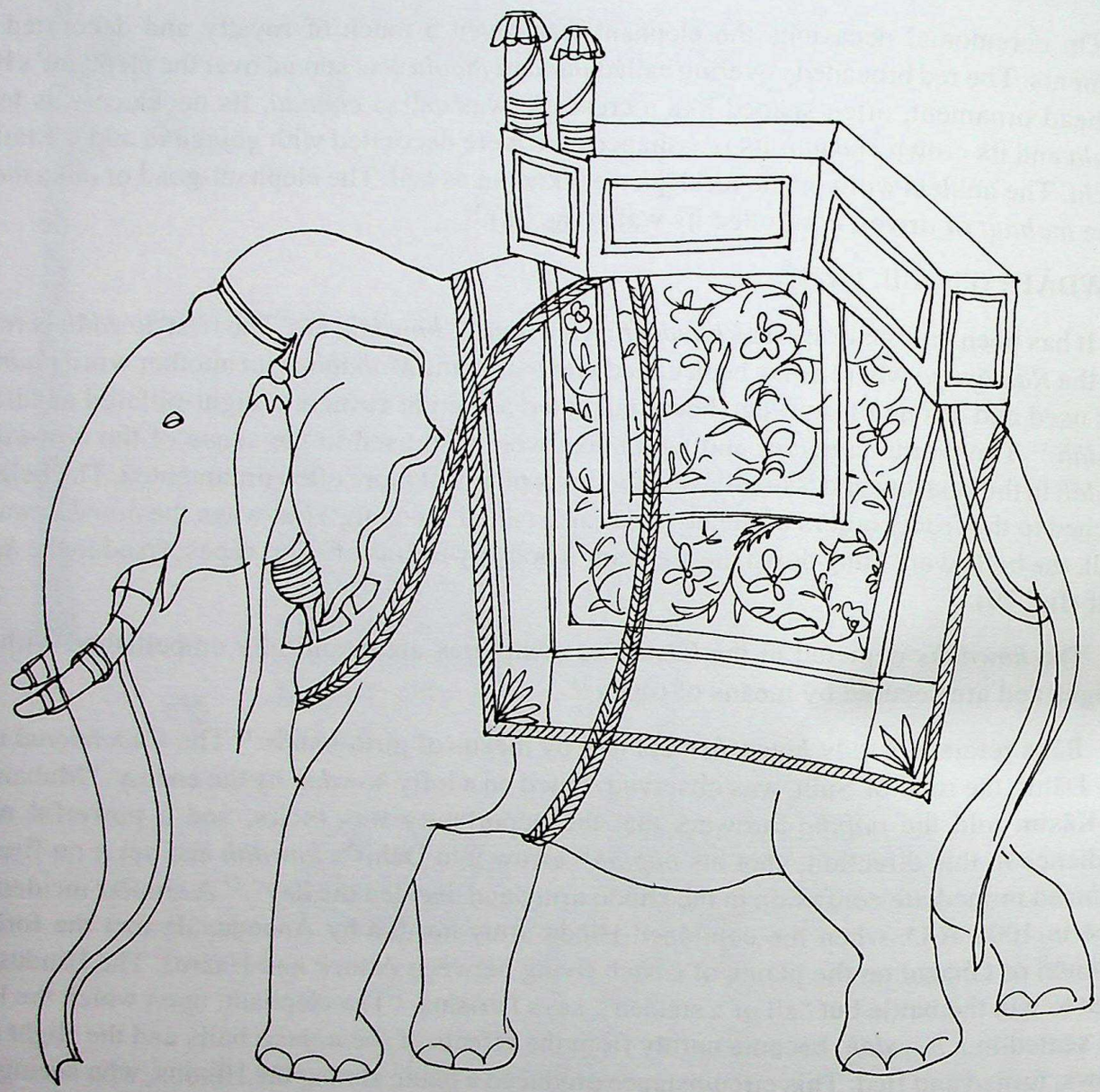


Fig. 80 *Firakī* (light and open *howdāh*) of wood meant for less important knights. The elephant is wearing tusk-protector, *jhūla*, head covering and several ropes.

floral designs.[23] Jahāngīr has mentioned a *howdāh* made of gold worth 30,000 rupees.[24] It was presented to him together with the elephant called 'Nūr-i-Naurūz' by Qutubul Mulk, the ruler of Golconda, on the 10th March, 1619 A.D. (*cf.* Pl. XIII)

In 1659 A.D., in the war of succession, Mīr Bakshī, the General of Dārā Shikoh, was killed by the soldiers of Aurangzéb but he was propped up into *howdāh* by another man so that none knew of his death till the end of the battle.[25] On Saturday, the 27th July, 1662 A.D., the 'Id-ul-zuhā' took place when Aurangzéb presented to the Persian envoy an elephant with gold litter and silver trappings together with other items.[26]

Shiv Dās Lakhnawī records that in 1714 A.D., Emperor Farrukhsiyar defeated Ajīt Singh Rāṭhor, the Rājā of Johdhpur. The Rājā then agreed to marry his daughter with the Emperor. He sent *dolā* of the daughter and the *péshkash* (presents) which included ten elephants with *howdāhs* of gold and silver.[27]

On the 13th Februrary, 1739 A.D., Sādat Khān was fighting with the forces of Nādir Shāh at Karnāl. His elephant was charged by the infuriated elephant of his nephew Nisār Muhammad Khān and driven into the Persian ranks. "A Persian soldier boldly galloped up to his horse round it, he climbed up to Sādat Khān's *howdāh* by the rope hanging down from it. The Khān now surrendered and was taken to Nādir's camp."[28]

The *howdāhs* of Haider Alī of Mysore are thus described, "Hyder marched in procession every day to Serirangpatam. The elephants, bearing the great standards of the *Sawārī* embroidered in gold on a blue ground, one representing the sun and other the moon and the stars, headed the line of elephants .. These were succeeded by five saddles by means of straps and silver chains. Each of these chairs contained six warriors, clad in musket-proof armour and armed with fusils', a species of blunderbuss, of a very large conical bore.... The Nabob rode on a white elephant decked with rings and chains of silver. The pavilion in which the Nabob sat was covered with yellow stuff and was ornamented with four small globes of silver. Attached on each side by silver chains hung small hatchets. The elephant bore on his head a kind of buckler of gold, representing a sun. About 200 elephants marching in pairs followed the Nabob. Their trappings and the pavilions they bore varied in colour and magnificence. Some were bordered with gold and silver lace. Many of the pavilions were composed of wrought silver or enriched with precious stones".[29]

In 1849 A.D., at the battle of Goojerāt (during the Second Sikh War) Chatar Singh and his son Shér Singh, the Sikh rulers, faced the British forces riding the elephants with handsomely caparisoned *howdāhs*.[30]

For comfort the *howdāhs* were furnished with quilt and bolsters and sometimes an additional *shāmiyānā*, supported on two poles, was connected in the front. The sides of the *howdāhs* were furnished with curtains.[31]

TYPES:

The *howdāhs* are classified into the following types:

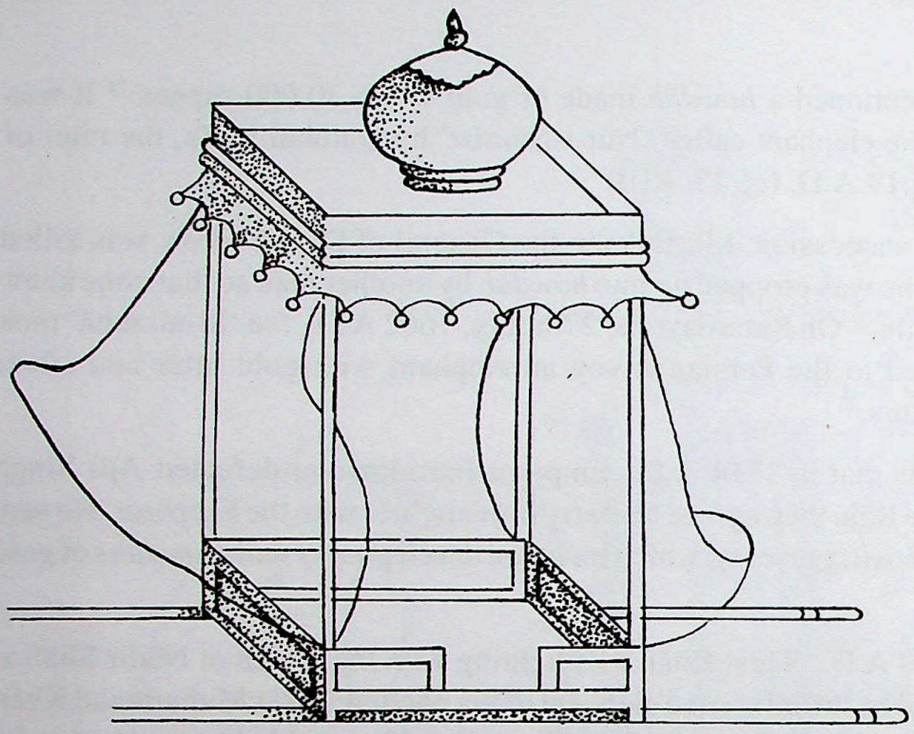
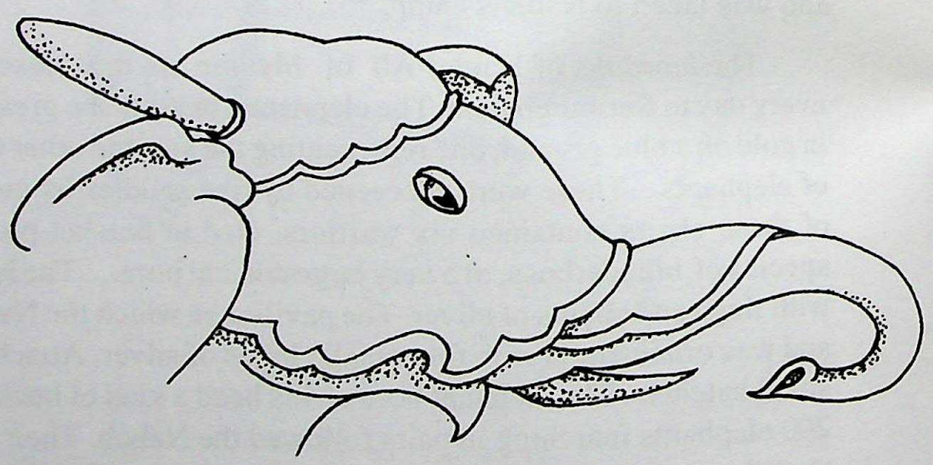


Fig. 81 *Imarī*, square seat has a square canopy resting on four columns, 17th century A.D. (Banaras Vidya Mandir Museum, Varanasi)

Fig. 82 Armoured elephant. Trunk is protected only half way.



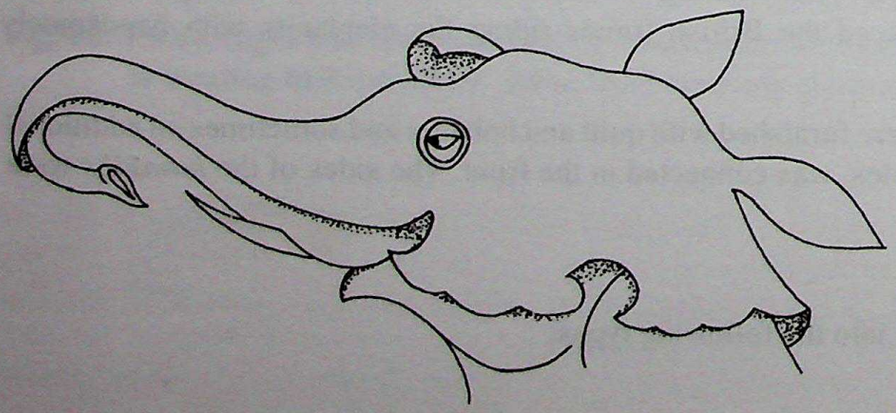


Fig. 83 Completely protected trunk. The armour is made of one single piece of metal.

A.FIRAKĪ: (Pls. XXIV, LII, LV, LVI, LVIII)

It was a light and open *howdāh* meant for less important knights, one such example is displayed in the Mahārājā Banāras Vidyā Mandir Museum, Varanasi (fig. 80).[32]

B. CHHATRĪDĀR:

It was the *howdāh* made of wood and inlaid with ivory. It was having a canopy or was encased with glass.

C. CHAUKHANDĪDĀR:[33] (Pl. LIV)

It was a square-shaped *howdāh* with a canopy resting on four pillars. It was generally enclosed.

D. CHĀRJĀMA:[34] (Pl. LV)

It was a smaller *howdāh* without canopy or enclosure.,

E. CANE HOWDĀH:

In the Banāras Vidyā Mandir Museum is displayed a typical *howdāh* which is woven of cane.

F. BABY HOWDĀH:

It was a very small *howdāh* resembling a horse saddle and was used for riding a baby elephant.

IMARĪ:[35]

The *imarī* was a turret with a canopy for riding an elephant in peace and war. Abul Fazl informs that several elephants provided with comfortable *imarī's* were always kept ready at the palace during Akbar's time.[36] Its seat was rectangular or hexagonal with a canopy and the sides were covered with curtain. The top of the canopy was flat or conical or dome-shaped.[37] The *imarī* was very comfortable and could also be used as a sleeping apartment. It was very suitable for long journey and hunting expeditions.[38] When the emperor proceeded on a war expedition the royal ladies of his harem travelled in the *imarīs* (fig.81).

William Irvine, quoting *Mirāt-ul-Ustiāh* (folio 207 b), says, "the riding elephants carried on the day of battle an armour-plated, canopied seat called an *imarī*, of which the sides were some three feet high. The prince or noble took his seat in this, and was thus protected, with the exception of his head and shoulders, from all distant attacks."[39]

We are told by Hājī Mustaphā[40] that *imarī* and *haudāj* (*howdāh*) were different. The *imarī* had a canopy while the *howdāh* had no cover.[41] The same author says that the *howdāh* was made of boards strenthened with iron, having the shape of an octagonal platform with sides 18 inches high. During the war times the sides were raised to two feet, and were then covered with iron or brass plates. It was divided into two unequal parts; in the forepart, about three-fourths of it, a man may easily sit with the pillows and cushions, or upon a stretch two men. The hind part held one man, and that with difficulty.[42]

The two personal *imarīs* of the *Mahārājā* of Banāras are displayed in the Mahārājā Banāras Vidyā Mandir Museum. Both of them are richly embellished with silver enamel work and are

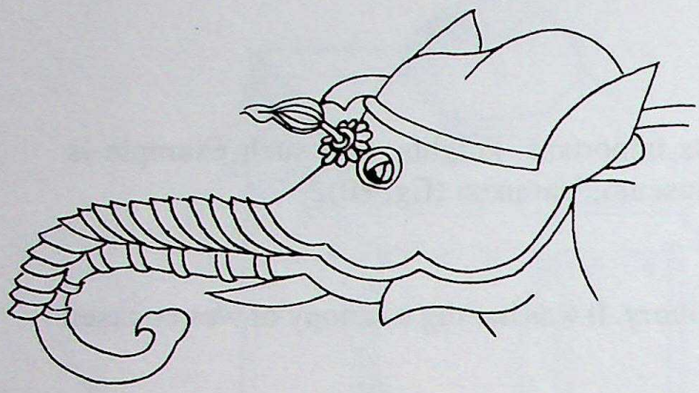


Fig. 84 The trunk-protector is made of lamellar steel plates and the forehead guard that of metallic plate. A floral ornamentation (*chandā*) also served as a protection against enemy lance thrust.

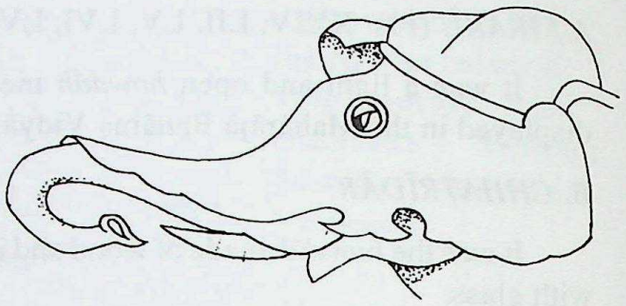


Fig. 85 Trunk protected with a single plate of metal.

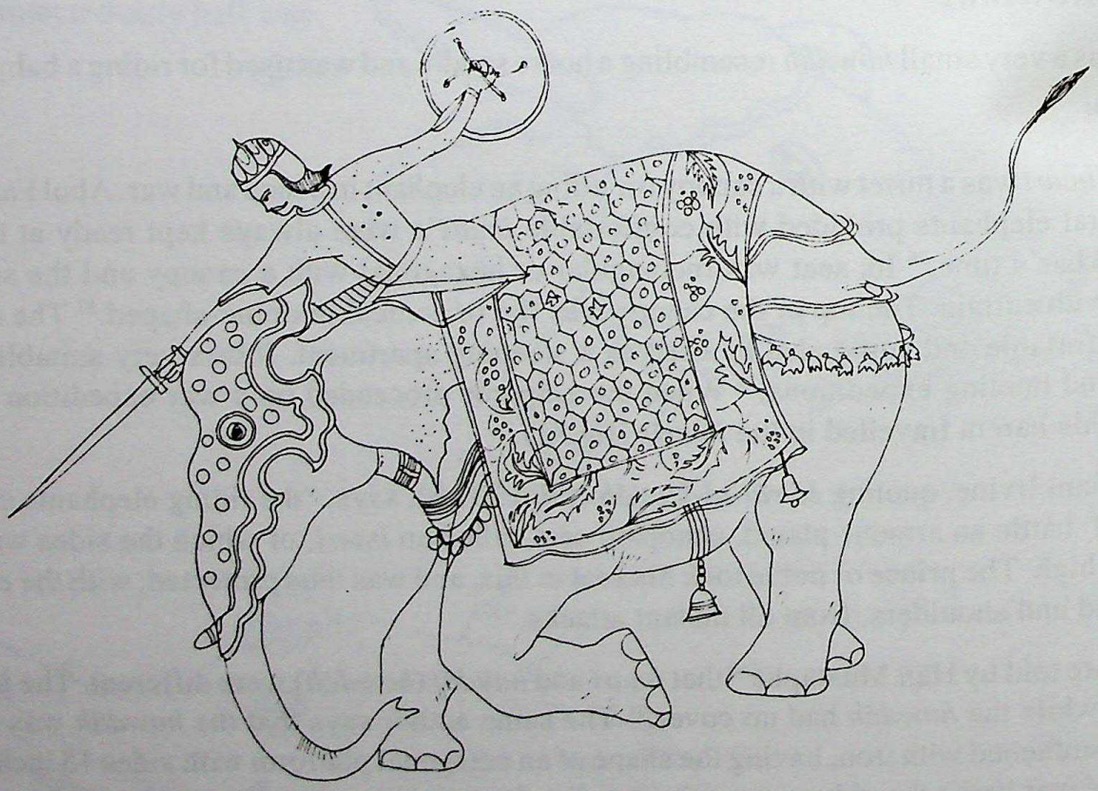


Fig. 86 War-elephant, front and half of the trunk guarded, the *jhūla* consists of metallic plates and a number of bells are attached. From a Rājpūt miniature painting, 17th century A.D.

provided with a covering overhead. These have been called *ambārī* (probably a corruption of *imarī*). Still another *imarī* in the same Museum is decorated with gold ornamental work and was used exclusively by the king.

TRUNK PROTECTOR OR PĀKHAR: (Pl. LIX)

It was a frontlet which protected the forehead and the trunk, specially the trunk, which is the vital organ of an elephant. The *Shukranīti* speaks of the armour for the protection of the body and the trunk of an elephant (fig. 82)

During the Mughal period it was called *pākhar*.[43] It was made of steel plates and chains and consisted of two parts; one covering the head and other the trunk.[44] Abul Fazl has mentioned it.[45] In the Mughal miniature paintings two kinds of *pākhar* are noticeable;

A. It covered the entire trunk (fig. 83).

B. It covered only half of the trunk (figs. 82, 85).

Both these types could further be made with or without the head-plate. The *pākhar* was usually embellished[46] with embossed floral and geometrical designs (fig. 84). A plate just below the forehead was sometimes decorated with plumes made from the yak-tail. In addition occasionally the head-cover had two long ears of steel (fig. 83).

There are several anecdotes in which the war-elephants, provided with the frontlets of steel, were employed to batter the gates of the fortified places.

TUSK PROTECTOR OR DANTA KAVACHA: (Pls. XXIV, XXXIII, XLVI, LI, LV, LIX)

In some of the early Buddhist works it is recorded that the tusks of the elephants were tipped with metal spikes (fig. 80).[47] Hieun Tsiang also records that the tusks of the elephants of Harsha's army were provided with sharp barbs.[48] Similar reference is found in the *Kāmandakīya*[49] also. Describing the royal elephants of Alauddīn Khaljī, Amīr Khusrau says, "Its back was adorned by a jewelled litter (*howdāh*). Its banner (trunk) rose from its back like a spear into the air, while its feet cast their shields (footprints) on the ground. It wore a dress of velvet. Its tusks came out on either side, and in spite of their strength, had been plaited over with gold (fig. 80)."[50]

In the Mughal miniature paintings the tusks are partially or completely protected with armour. (Pl. III)

EYE PROTECTOR OR ANDHIYĀRĪ: (Pl. LIX)

Māgha says that during the battle the eyes of the elephants were protected by means of a kind of cloth. During the Mughal period it were protected by *andhiyārī*.[51]

EAR PROTECTOR OR GAJAGĀHA: (Pl. LIX)

These were leather or metal plates shaped like a fan and were used for the protection of the huge fan-shaped ears of the elephant.

BODY ARMOUR OR HATH-JHOOL: (Pls. XL, XLVI, IL, LI, LIII, LV-LVIII)

Leather was considered the finest material for the preparation of an elephant armour. In the

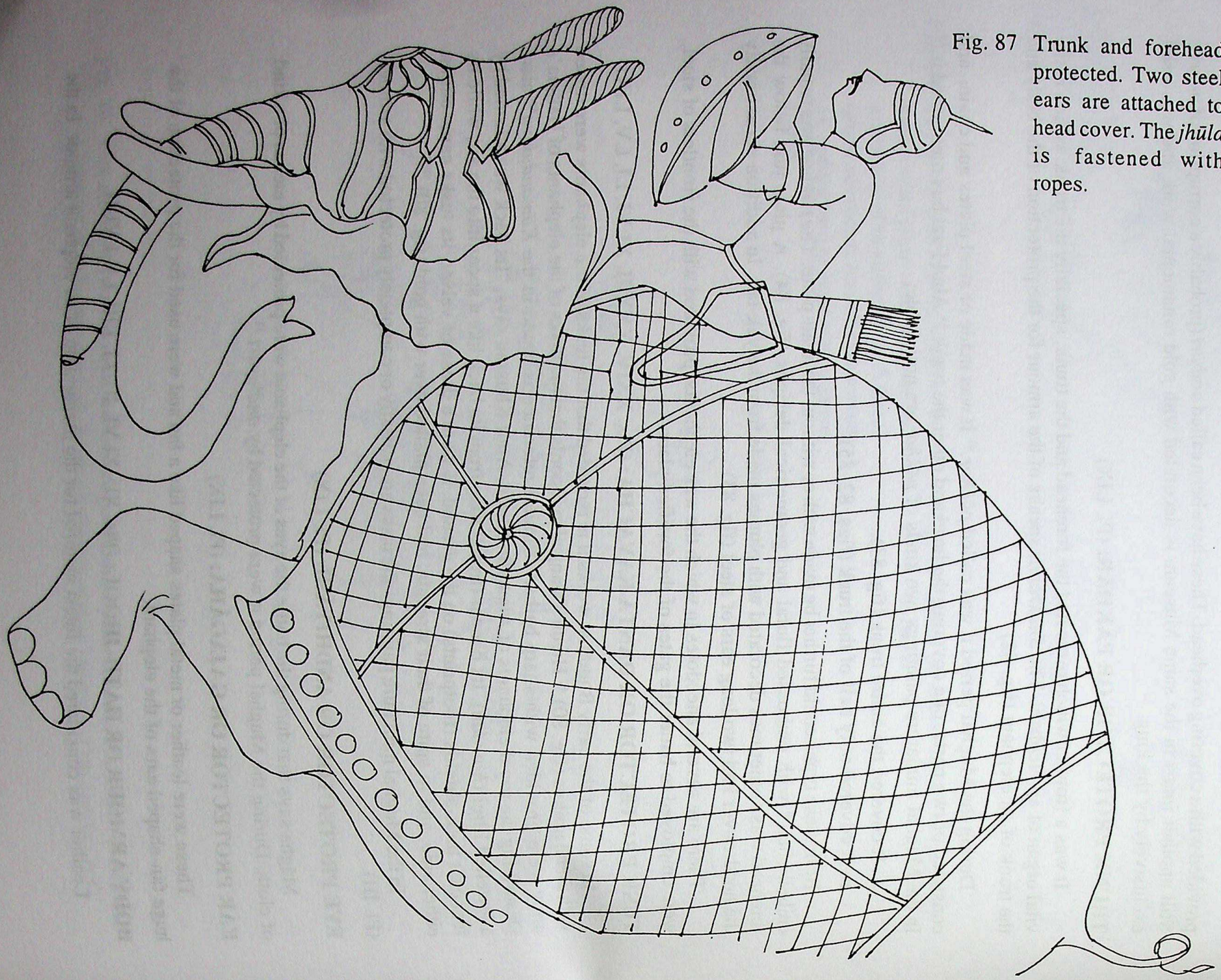


Fig. 87 Trunk and forehead protected. Two steel ears are attached to head cover. The *jhūla* is fastened with ropes.

Mahābhārata, however, it is recorded that "the king of the Kuru is stationed in the centre, and enters the fight, not in a war-car, but on an enormous white elephant with net armour".[52] The *Shukranīti*[53] speaks of a body armour for the elephants which was made of big leaves resembling wheat-leaves, made of iron, although leather has also been recommended (fig. 86).

During the Mughal period this body armour was called *jhool or jhūl* (fig. 87). In the *Tuzuk-i-Jahāngīrī* and other manuscripts many elephants have been referred to which were covered with black *jhool*. It was made of steel plates and chains and consisted of two parts. Sometimes it was made of one piece only. The steel plates were hinged together on a quilted covering. No name for this armour has been assigned by Abul Fazl.[54] The armour resembles the *artak-i-kajem*.[55] Locally it is called *hath-jhool*.[56] (Pl. IV)

In the Maharaja Banaras Vidya Mandir Museum, Varanasi, is displayed a *jhool*. It is a huge red broacaded covering with steel plates. It was spread over the elephant's back.

TAYYĀ:

It is described in the *Āin-i-Akbarī*. It consisted of five plates, each a span long and four fingers broad, fastened to each other by rings. On both sides of the *tayyā*, there were two chains, each a yard long, one of which passed from above the ear, and the other from below it to the *kilāwā*, to which both were attached. Below crossways, there were four iron spikes ending in a curve, and adorned with knobs. This was partly for ornament and partly to frighten the enemy.[57]

CONCLUSION:

Thus the armoured elephants continued to fill an important role in the Indian military system long after the conquest of India by the Muhammadans (fig. 88). It was only after the introduction of the fire-arms and the gradual extension of their use that they ceased to be of value in the fighting line of battle.[58] In 1894 A.D. the official news was published in the Indian newspapers, "The Government (British) *howdāh-khānā* had been broken up, there being only two or three hundred elephants on the rolls all over India, nearly all of which are maintained for heavy batteries: the equipment of Agrah (Agra) has been sold of, only the vice-regal *howdāh* of silver being kept. We have thus travelled far from the days when one of our early Commanders-in-Chief Colonel Richard Smith reviewed his troops from the *houdār* (*sic*) of his elephant".[59]

The National Museum, New Delhi; Maharaja Banaras Vidya Mandir, Varanasi; Durbar Hall Museum, Junagadh; City Palace Museum, Jaipur, etc., display the elephant *howdāhs* and complete armour. One of the finest specimen is exhibited in the Tower of London Armouries, London, which was taken by Robert Clive at the Battle of Plassey in 1757 A.D. It consists of chanfron (*pākhar*) extending half-way down the elephant's trunk, with flaps for the ears and circular opening for the eyes and the bony projections on the top of the skull which are frequently struck by the *mahāut* (driver) with his elephant-goad (*aṅkusha*) to direct the animal's progress. This is entirely constructed of vertical columns of horizontal lamellae connected with mail, with brass-edged bosses on the ears and at the termination of the trunk-guard. In the centre of the face a heavy brass-rimmed shield-shaped plate is riveted with a threaded hole in the centre.[60] There is a section of the same construction for the tender throat of the elephant and two large panels cut away to fit round

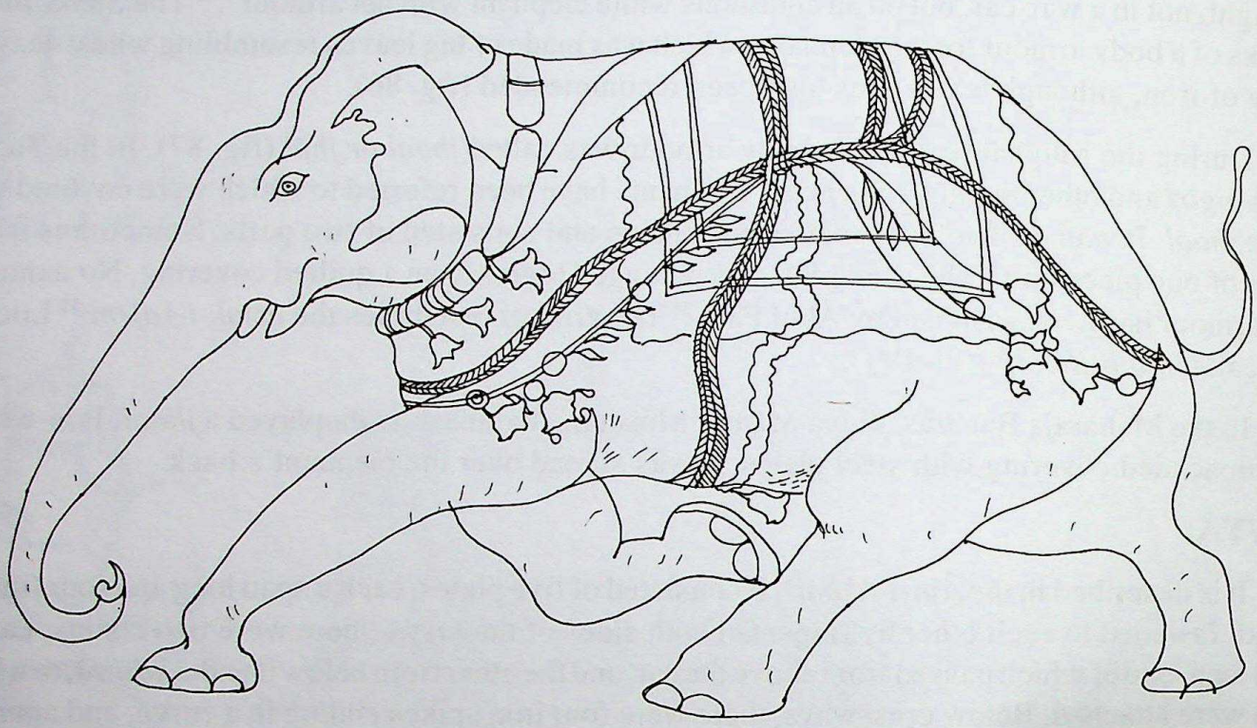


Fig. 88 Elephant decked with *jhūla*, ropes, bells, and garlands.

either side of the neck, fastening with rings and ties at the centre of the front. These, and two large side-panels of rectangular shape, reach to the front of the elephant hind legs.[61] The side-panels attach to the breast sections with ties and rings, and a series of heavy strap secure them over the back.[62] The sections of the body armour are built up of the usual vertical rows of lamellae and mail, but with square-framed plates breaking pairs of rows at intervals, with unbroken rows between. These square plates are embossed with elephants, peacocks, pairs of fish and conventional flowers.[63] A lining of coarse fabric padded with cotton wool prevented the armour from chafing the elephant's tough but sensitive hide.

References

1. Aelian, *History of Animals*, XIII. 10..
2. Christian Jane Herringham, *Ajantā Frescoes* (London, 1915), pl. XLII.
3. *Agni Purāṇa* edited by Panchanana Tarkaratna (Calcutta, 1907), 250.31.
4. E.W.Cowell, *The Jātakas*, translated into six volumes (Cambridge, 1895), vol. VI, p. 253.
5. Abul Fazl, *Āin -i- Akbarī*, tr. by H.Blochmann (Calcutta, 1873), reprinted (Delhi, 1965), *Āin*, 45, p. 134.
6. It was a large chain of iron made of sixty oval links. Formerly it was used to fasten the forefoot of the elephant (called *kaṅkaṇa*) but since it was found injurious to the chest of the animal, the practice was discontinued by Akbar and the chain was then used for fastening the hind leg. Both the hind feet were tied with another chain called *bérī* or *béḍī*. There were many other chains also.
7. The *dulthī* was a rope, five yards long, as thick as a staff. This they tied over the *kilāwā* (described later). The *dōr* was a thick rope passing from the tail to the throat. Many other trappings were attached to this *dōr*. The *gudautī* was a chain of brass attached near the tail which it prevented from getting injured by the *dulthī*. The *pichwā* was a belt made of ropes and was fastened over the buttocks of the elephant.
8. *Āin-i-Akbarī*, *op.cit.*, *Āin* 45, pp. 135-6.
9. V.P. Dwivedi, *A Brief Guide of Maharaja Banaras Vidya Mandir Museum* (Delhi. n.d.), pp. 11-16.
10. *Kerela* or the wooden club set with iron nails was another instrument for controlling the elephant's gait.
11. E.W.Hopkins, *op. cit.*, p. 212 f.n.; *Mahābhārata*, I. 198.16.
12. As referred to earlier the term *vimāna* (*Mahābhārata,* IV. 65.6) is commonly used for a *howdāh.* Duryodhana (VI.20.7) and Bhāgadatta (VI. 95.33 ff) rode the elephant in *howdāhs* in war.
13. F.C.Maisey, *Sānchī and Its Remains* (London, 1892), pl. XVI, fig. 1.
14. K.Krishna Murthi, *The Gāndhāra Sculptures: A Cultural Survey* (Delhi, 1977), p. 100, figs. XXII. 3 and 4.
15. Bāṇa's *Harshacharita* translated by E.B.Cowell and F.W.Thomas (London, 1897), pp. 202-3.
16. The term *napthā* originally meant 'Greek fire'; in modern Persia it means 'petrol'. Since we find *napthā* being used again and again for the burning of the *howdāhs* of the elephants (and also the houses and the forts) the reference can only be to the gunpowder. This is clarified by Yazdī, who, on occasions, uses the term *napthā-i-siyāh* or black *napthā* which could only mean gunpowder, *vide*, M.Habib and K.A.Nizami (ed.), *A Comprehensive History of India; The Delhi Sultanate*, vol. V. (Delhi, 1970), p. 125 *f.n.*
17. *Ibid.*

18. John Briggs, *Firishtāh* (London, 1770-72), vol. I, p. 47.

19. Elliot and Dowson, *op. cit.*, vol. II, p. 223.

20. S.P.Verma, *Art and Material Culture in the Paintings of Akbar's Court* (New Delhi, 1978), p. 106, pl. LXIX, fig. 23.

21. *Ibid.*, pl. LXIX, fig. 24.

22. E. Moor, *Narrative of Captain Little's Detachment* (1793), in his glossary says that the canopy of the *howdāh* was made of European scarlet cloth and embroidered and sometimes had a golden or silver urn or some other ornament on the top. The Muslims preferred a crescent.

23. The following account of Mughal elephants under Akbar and his immediate successors has been left to us by De Mandelsloe (1638 A.D.). He says, "Their (Mughal warrior's) chief trust lies in their elephants on the backs of which are fixed certain wooden towers, carrying three or four men with arabesques, but the worst is that these beasts, being terrified by fireworks, make a greater havoc among their own people than the enemy", *vide*, W.Egerton, *Indian and Oriental Armour*, reprinted (London, 1968), p. 24.

24. Rogers and Beveridge (tr.), *Tuzuk-i-Jahāngīrī*, reprinted (Delhi, 1968), vol. II, p. 79. In the 13th regnal year (1618 A.D.) Itimāduddaulā presented to Jahāngīr an elephant with a silver *howdāh* (*ibid.*, vol. II, p.23).

25. Sāqī Mustānd Khān, *Māssīr-i-Ālamgīrī*, tr. and annotated into English by Jadunath Sarkar (Calcutta, 1947), p. 11.

26. These included an enamelled dagger with a pearl strap, a horse with a gold saddle and bridle, one *darīāī* elephant and a *pālkī* with gold trappings, *vide, ibid.*, p. 22. An elephant with a silver *howdāh* was given by Aurangzéb to Shādman Khwājā, the ambassador of Balkh, in 1670 A.D. (*ibid.*, p. 61).

27. Shiv Dās Lakhnawī, *Shāhnāmā Munawwar Kalam* translated by Syed Hasan Askari (Patna, 1980), p. 5. The other items were fifty horses with trappings of gold and silver embroidered and set in with lapis lazuli and jewels worth fifty lakhs of rupees.

28. Jadunath Sarkar, *op. cit.*, p. 50.

29. *Vide*, W. Egerton, *op. cit.*, pp. 121-2.

30. Joseph Thakwell, *op. cit.*, p. 124.

31. A wooden case similar to a *howdāh* was used for the soldiers to descent from the top of the hill into a valley (*vide, Tārīkh-i-Khāndān-i-Timūriā*, manuscript in the Khudā Bux Library, Patna, ff. 69, 122). It was provided with chains at each end, which were connected to main chain (*vide*, S.P.Verma, *op. cit.*, pl. LXVIII, fig. 27). It was lowered down like a bucket and could accommodate four to six men. The main chain was let loose by the men holding it at the top so as to direct the seat downwards.

32. Vinod Dwivedi, *Banaras Vidya Mandir Guide Book, op. cit.*, p. 13.

33. A. Rogers and H. Beveridge (tr.), *op. cit.*, vol. I, p. 226. It records that Shājaat Khān, one of the generals of Jahāngīr, fell down from his *chaukhandīdār howdāh* in a state of drunkeness and eventually died.

34. *Ibid.*, p. 226, footnote.

35. F.Steingass, *Persian-English Dictionary* (1892), calls *imarī*. It is also spelt *amharī* or *amharā*.

36. Blochmann (tr.), *op. cit.*, vol. I, p. 138.

37. S.P.Verma, *op. cit.*, p. 106, pl. LXVIII, fig. 26.

38. During the hunting expeditions the ladies watched the game from the *imarīs* and sometimes partook of the hunt from there. Jahāngīr has mentioned in his memoirs that Nūr Jahān could shoot tigers while sitting in the *imarī* (*vide*, Rogers and Beveridge (tr.), *op. cit.*, vol. I, p. 375; vol. II, p. 105.

39. W. Irvine, *The Army of the Indian Moghuls*, reprinted (Delhi, 1962), p. 176.

40. Hājī Mustaphā, *Seir*, II, 301, note 140.

41. This distinction is not correct since we find the mention of several covered *howdāhs* also.

42. *Ibid.*, I, 337, note 283.

43. S.P.Verma, *op. cit.*, p. 101, pl. LXVI, figs. 9 to 13.

44. W. Irvine informs that in some of the manuscripts of the Mughal period the word *bargustuwan-posh* has been used. He defines it, "as a protective covering adjusted on the trunk of an elephant when going into battle", *op. cit.*, p. 176.

45. *Āin-i-Akbarī*, *Āin*, 45. It says, "The *pākhar* is like an armour, and is made of steel: there are separate pieces for the head and the trunk."

46. *Ibid.*, "the *gaj-jhāmp* is a covering put as an ornament above the *pākhar*. It looks grand. It is made of three folds of canvas, put together and sewn, broad ribbons being attached to the out side".

47. A.L.Basham, *The Wonder that was India* (London, 1954), p. 129.

48. Thomas Watter, *On Hieun Tsiang's Travels in India*, edited by T.W.Rhys Davids and S.W.Bushell (New Delhi, 1973), vol. I, p. 171.

49. *Kāmandakīya*, XX. 60.

50. Amīr Khusrau, *Khazainul Futuh* or *the Compaigns of Allauddīn Khiljī* (tr.) (Madras, 1931), p.75.

51. The *Ā in-i-Akbarī*, *Ā in*, 45, mentions *andhiyārī* (literally 'darkness' which was renamed as *ujyālī i.e.*, light, by Akbar). It was a piece of canvas about one and half yards square. It was made of brocade, velvet, etc., and tied with two ends of *kilāwā* (the twisted ropes with a huge ring serving as a kind of stirrups for the *mahāut*). When the elephant was unruly or for other reasons, it was let fall, so that the elephant could not see. Three balls were attached to the ends of the canvas and it served as the eye-protector at the time of urgency.

52. *Mahābhārata*, VI. 17.26 *cf.*, with the like description of metal armour in XII. 100.7-8. In VII. 36.34, the gold *jāla* or net is fastened to the elephant.

53. Shukrāchārya, *Shukranīti*, 4.7.216.

54. Blochmann (tr.), *op.cit.*, p. 136.

55. S.P.Verma, *op. cit.*, p. 101, pl. LXVI, figs. 14,15.

56. The brocaded leather covering for the back of the elephant has also been termed as *jhool*.

57. *Āin-i-Akbarī*, *Āin*, 45, No. 20.

58. In the beginning of the 19th century the elephants were employed for the transport of heavy guns. At that time they were furnished with thick leather pad, covering specially the forehead to prevent their being injured, *vide*, Thomas Williamson, *Oriental Field Sports* (London, 1807), p. 43.

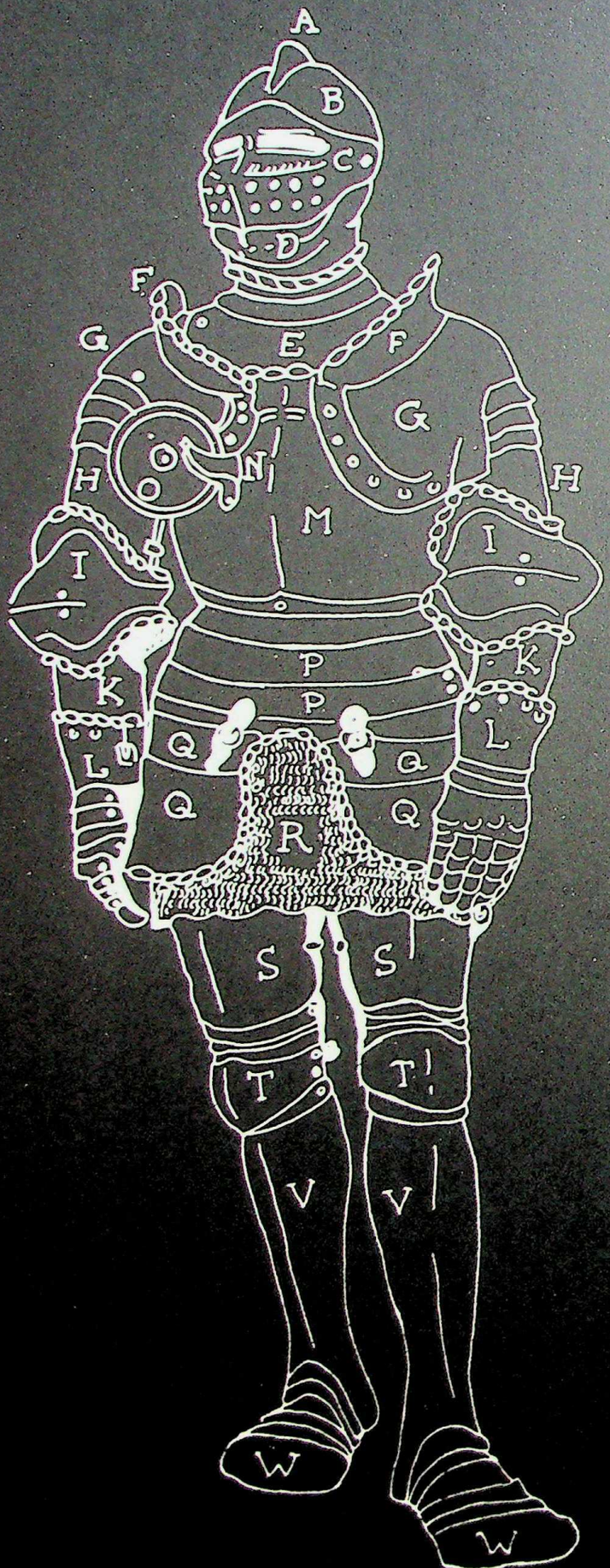
59. *The Pioneer Mail*, September 27th, 1894 A.D., p. 2; W. Irvine, *op. cit.*, pp.180-181.

60. Romantic fancy suggests that this was securing a large and formidable spike, but the Mughal miniatures show large hair tassels fitted with flywhisks in this exact position on leather chanfrons.

61. Two missing sections would have covered the animal's hind-quarters, their existence being indicated by the presence of rings on the rear edges of the side-panels.

62. H. Russell Robinson, *op. cit.*, p. 120.

63. This was an armour made for the exclusive use in war. It weighed four hundred and forty-eight pounds.



A Crest
B Skull
C Visor
D Beavor
E Gorget
F Shoulder-guard
G Pauldron
H Rerebrace
I Coude or Elbow-cop
K Vambrace
L Gauntlet
M Breast
N Lance-rest
O Palette or Rondel
P Taces
Q Tassets
R Breech
S Cuisse
T Genouillere or Knee-cop
V Jamb
W Soleret

7
Arms and Armour of the Mounted Warriors

INTRODUCTION:

The day of the war-horse dawned with the age of the *Rigveda*.[1] Apart from their use in the chariot, an independent light cavalry was used in cattle raids and border depradations. The horse-rider depended on his bow and arrow which, however, could not be effectively used from horseback in the absence of stirrups[2] and proper saddle.[3] The lack of stirrups and saddle did obstruct a free movement, but did not stop the ancient horse-archers to shoot with their bows.[4]

Shooting arrows and hurling spears from the horseback was a part of the prince's military training and all the noted characters of the *Rāmāyaṇa* and the *Mahābhārata* were well-skilled in this art.[5] The horse-archery tournament[6] organised by Droṇa has already been referred to.

HORSE-ARCHERY:

Despite all these stray examples a thing like real horse-archery was not very popular. The historians of Alexander make no mention of Indian horse-bowmen.[7] The *Shiva Dhanurvéda*, which gives detailed rules regarding the practice of archery, is curiously silent about the horse-archery.

In all probability the regular horse-archery was introduced on the Indian soil by the Scythian and Parthian 'Satraps' who invaded and conquered North-west India in the first century B.C.[8] Their certain coins bear testimony to this fact. King Azes I, Azileses and Azes II and Satrap Zionises are depicted on their coins as horsemen equipped with bows.[9] The superiority of cavalry in general, and of horse-archery in particular, was one of the causes of the military success of these foreign invaders in India.

Once the advantages of the horse-archery were known to the Indian soldiers, it gradually became a part of Indian mode of warfare as well though it was never very efficient.

The evidence of the numismatics indicates that the Gupta monarchs were horse-archers. On certain types of their coins Chandragupta II, Kumāragupta I and Prakāshāditya are portrayed as riding the horses and carrying the bows.[10] Chandragupta II and Kumāragupta I are riding fully caparisoned horses and holding bows in their hands.[11] Prakāshāditya is seen seated on his horse, having a sword in his right hand with which he thrusts at a leaping lion, and a bow, round his body, with its string resting on his left shoulder.[12]

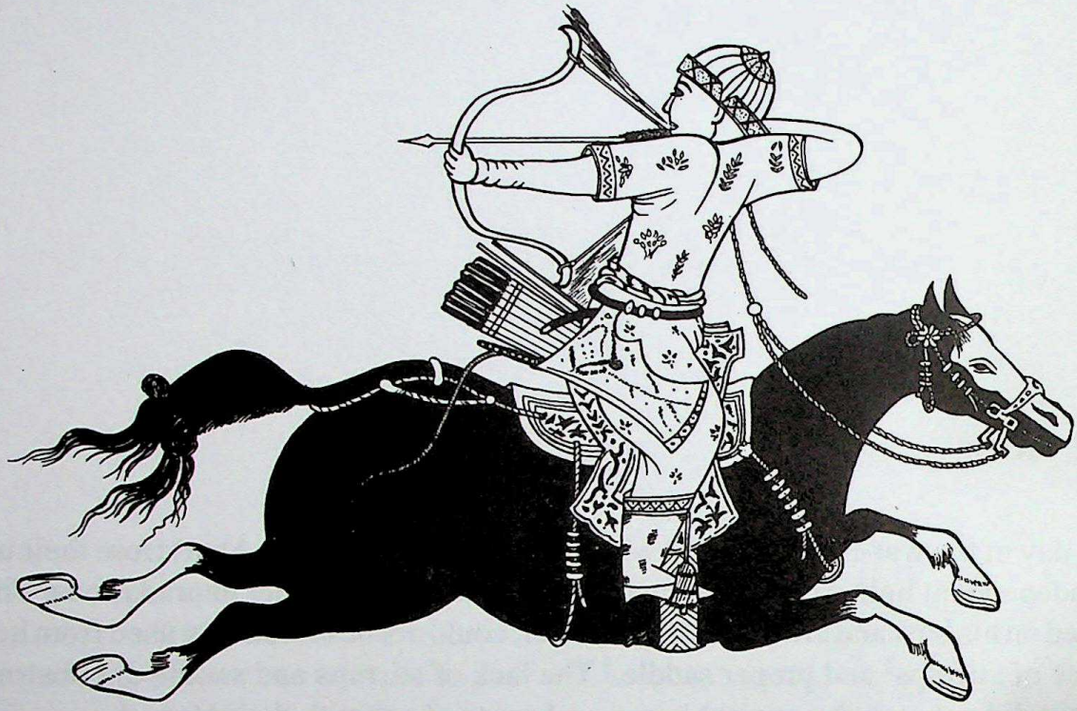


Fig. 89 Horse-archer using his bow from the back of a galloping horse. He is firmly seated on a saddle with his feet in the stirrups. Drawn from a miniature painting, 17th century A.D.

Fig. 90 A cavalier riding a bridled horse. He is carrying a quiver filled with arrows and a *qirbān* with a bow. From a miniature painting, 18th century A.D.

Nevertheless the art of horse-archery did not strike deep roots in the soil of ancient India. P.C.Chakravarti rightly remarks, "Introduced by the Parthians and continuing for a time as a sickly exotic, it (horse-archery) withered away shortly after the Gupta period. This is the impression one gathers from the study of records of the post-Gupta India. Whether we ransack the valuable works left to us by the Chinese pilgrims and Muhammadan chroniclers, examine the indigenous literature, inscriptions and coins of later Hindu period, we will scarcely find a reference to Indian horse-archers. The conclusion is, therefore, irresistable that after a short endeavour to learn this important branch of the art of war the Hindus fell back into their old grooves and relapsed into their traditional tactics".[13]

The horse-archery was revived in India by the Turks in the 11th century A.D. (fig. 89). Persian and Afghan bows played very significant roles in the two battles of Tarāin (1191 and 1192 A.D.). The first battle was fought mainly with javelins and lances in which Sultān Muizzuddīn Ghorī was himself wounded. In 1192 A.D., the Sultān reached Tarāin again. This time he had brought with him one hundered and thirty thousand horse-archers and spearmen out of which ten thousand mounted archers were kept in reserve. The battle ranged from morning to afternoon without any decision.[14] It was very difficult for the Indian princes, fighting from the elephant backs or the footmen with their *talwārs*[15] (swords) and *bhālās* (spears) or those carrying bows of cane and arrows of reed, to overpower the Ghurid cavaliers, fully equipped with steel coat and armour. In the afternoon Sultān Muizzuddīn put on his helmet and armour, hung his quiver filled with poisoned arrows, and then holding the bow, joined the battle with his reserve force.[16] Govind Rāi dashed ahead with an army of elephants and from his *howdāh* showered arrows on Sultān Muizzuddīn.[17] The Sultān hurriedly protected himself by putting a *karawā*[18] before his face and diverted his horse-archers to aim at the elephant drivers since the warriors were well defended by the *howdāhs*. As soon as three or four drivers (*mahāuts*)[19] were killed, the whole line of elephants was disturbed. One arrow, shot by the Sultān, killed Govind Rāi outright who fell down from his exalted *howdāh*, and another arrow pierced Rāi Pithorā (Prithvīrāj Chawhān) who, being wounded, got down from his elephant, mounted a horse, and, while trying to run away, was caught by the Ghurid archers and later on executed.

The Turks were a past-master in horse-archery (fig. 90). The Indian foot-archers, with their formal drill and slow traditional tactics, were no match for the swift-moving, light Turkish horse-bowmen. They used their bows from the saddle, supporting themselves with the stirrups while moving.

The disciplined invading Mongol army had also learnt the use of *napthā* (or *naphthā*) and horse-archery and therewith lead the enemy to distress. The Turkish Sultāns of Delhi, trained in the same line, alone could check the onslaught and save India from the frequent Mongol invasions. In the sphere of tactics, the Turks, who now became the masters of India, were quick to bring India on a part with Central Asian powers. The *pāiks* (foot-soldiers) were replaced by *sawārān-i-muqatalā* (mounted archers) and mobility and striking force, rather than heaviness and crushing strength, came to be regarded as the basis of military organization.[20]

A well equipped cavalier of this period had to provide himself with an Indian sword, a Tārtār

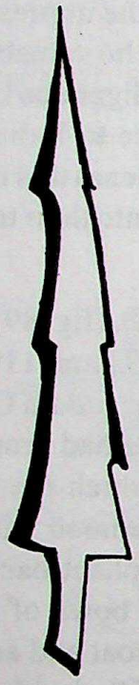


Fig. 91 Arrow-head, serrated.

Fig. 92 Arrow-head, oval-shaped.

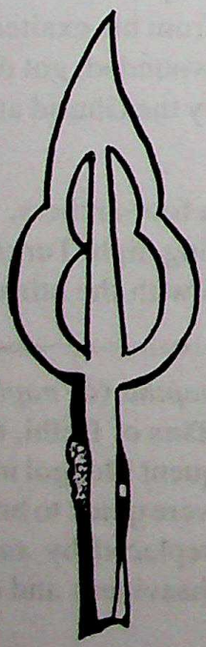


Fig. 93 Arrow-head, triple-arched.

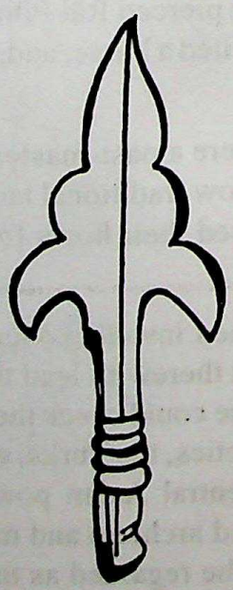


Fig. 94 Arrow-head, oval-shaped.

lance, an Afghanī horse and a Persian bow".[21]

The first battle of Pānīpat was fought between Bābur, the founder of Mughal rule, and Ibrāhīm Lodī, the last Afghān ruler, on the 20th April, 1526 A.D. The Indian force, heavily outnumbering that of Bābur's, consisted of one thousand armoured elephants, 20 thousand well equipped state cavalry, 20 thousand baronial levies mounted on country horses and 30 thousand foot-soldiers armed with pikes, swords and bows and arrows. Bābur had only 12 thousand horses with him and a few guns but his cavalry was very well trained in making lightening raids, night attacks and in laying ambushes. His tactics were to first disorganise the enemy by archery shots then charge with the guns.[22] The Muslim troopers were fuly armour-clad and used bows made of steel or of two horns joined together with a metal clasp, shooting arrows at longer ranges. Because of their greater penetrating power, as some of them could pierce an elephant hide, these arrows had deadly effect on the Indian soldiers. Ibrāhīm Lodī was killed (1526 A.D.)[23] and Rāṇā Sāngā (1527 A.D.) and Hémū (1556) were severely wounded and ultimately defeated by the arrows shot by the Mughal horse-archers.

In a number of miniature paintings[24] horse-archers are depicted. Similarly, the illustrated manuscripts[25] are full of such portraits.

BOW: (Pls. LXXII, LXXIII)

The cavaliers used the composite bow made of horn[26] or steel. About the horn bow Egerton says, "The concave side of the bow (convex when strung) is lined with several strings of thick catgut to give it elasticity and force. The material of which the belly of a bow is made is buffalo or wild goats' horn, jet black, or some hard wood little inferior in toughness, which serves for the back. The extreme points are fashioned to resemble a snake's head, the loops of the cord having appearance of being held within its extended jaws. The horn is left plain while the wooden back is decorated with rich arabesques. Birds, flowers and fruit are represented on its surface in varied colours intermingled with gilding and the grip of the bow is marked by broad bands of the same metal separated by figures of flower and fruit".[27]

The steel bow,[28] though in range and cast inferior to the horn bow, yet was popular throughout because the horn bows were easily distorted. The steel bow, if properly greased, remained the same and would have emerged better from storage than any other type of bow and could have been used immediately. The steel bow was a success owing to its high recurvature and thin cross-sectional limb construction. It had, therefore, an appeal to the horseman for relatively short range use, even if it was less efficient.

ARROW:

The arrow had three parts: (i) point (figs. 91-104), (ii) shaft (figs. 105-114), (iii) feathers. Innumerable points (or arrow-heads), all made of metal, were used; the shaft was of reed (sometimes of metal but rarely), almost cylindrical, and had a nock at the lower end. The nock was made of two piece of wood having a natural curve that made the opening at the end considerably smaller than close to the shaft so that the ends had to be spring apart to admit the string. This was done to enable the archer on horseback to carry an arrow in place for instant use.[29] The feathers of

Fig. 95 Arrow-head, shaped like a flower.

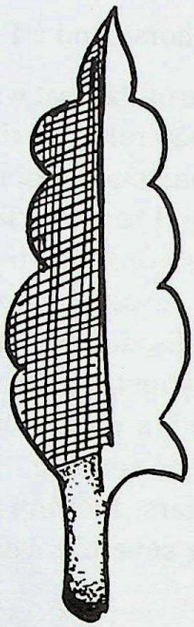


Fig. 96 Arrow-head, shaped like a flower.

Fig. 97 Arrow-head, triple-arched.

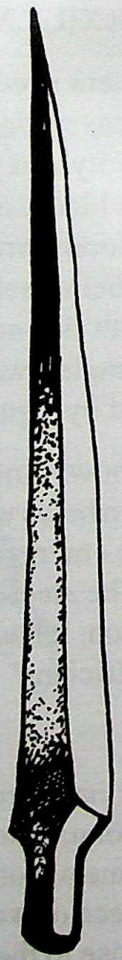


Fig. 98 Long and pointed arrow-head for big games.

birds (one to five) were placed parallel to the shaft, first glued and then tied with some sinew.

Inscribed,[30] poisoned and fire-arrows[31] were occasionally used.

QUIVER:

Three kinds of quivers were used by the horse-archer:

A. *Tarkash:*

It contained only the arrows. It has also been called *sāghdāq*. It could generally contain fifty arrows[32].

B. *Jaibāh:*[33]

It was a flat case, broad at the mouth, one side straight, other sloping to a point, provided with a strap for carrying over the shoulder. This quiver was used to hold the bow as well as arrows. It contained one bow and about 30 to 40 arrows.

C. *Qirbān:*

These were very wide and were exclusively for bows. There have been called 'bow cases'. It could contain two or three bows. Arrows were not kept in such quivers (figs.115, 116).

The bows were always carried strung in cases that only covered the lower half. These cases were usually made from goat's skin or other soft skin, often covered with cloth, silk or velvet, and decorated with inlays of leather or applied metal work, sometimes set with jewels. Occasionally *qirbāns* were made of stiffened leather with raised or incised decorations.[34]

The horsed-archer carried his bow and arrows in a different way. Quiver was worn handily at his wrist which kept the arrows to his hand and ready for instant withdrawal. Bow was carried at the waist, hung from the belt, inside *qirbān*, on the opposite side to the quiver (*tarkash* or *jaibāh*).[35]

These *jaibāh*, *tarkash* and *qirbān* were essential part of horse-archer's equipage and were very comfortable to wear.

The price of a quiver during Akbar's period varied from 1/4th of a rupee to two gold *muhars*.[36] The quiver-holders were called *tarkash-band* or *tarkash bandana*.[37]

OTHER EQUIPMENTS OF HORSE-ARCHER:

1. *Paikān-kash:*[38]

Literally 'arrow-head extractor'. This instrument was used to extract arrow-heads from the body of the soldiers. It was shaped like a pair of pliers.

2. *Tīr-kash:*[39]

Literally 'arrow-puller'. It was used in drawing the arrow out of the quiver. It had a cylindrical body and a square head containing a hook. The hooked portion is kept down in the quiver. With its help one arrow at a time is raised a little and then is drawn out of the quiver with the help of the hand.

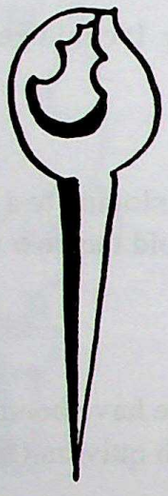


Fig. 99 Arrow-head for practising archery.

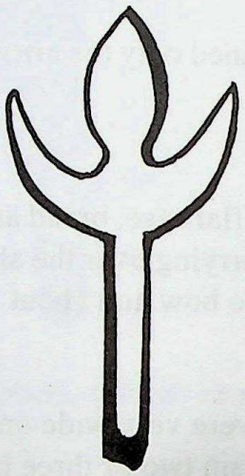


Fig. 100 Trident-shaped arrow-head.

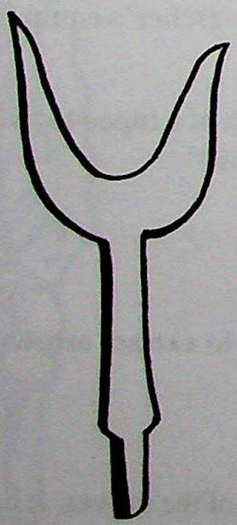


Fig. 101 Crescent-shaped arrow-head.

Fig. 102 Spear-head-shaped arrow-head.

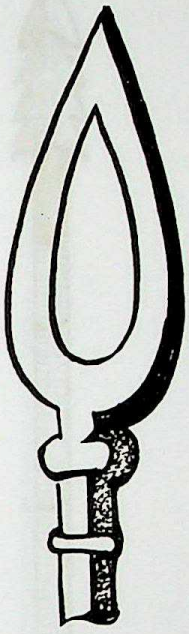


Fig. 103 Leaf-shaped arrow-head.

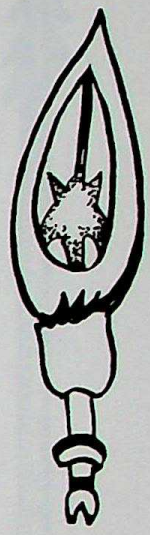


Fig. 104 Decorated leaf-shaped arrow-head.

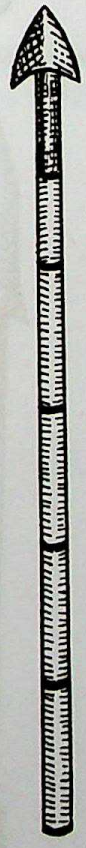


Fig. 105 Arrow for small game; triangular head, plain reed shaft.

Fig. 106 Arrow for small game; triangular pointed head, reed shaft.

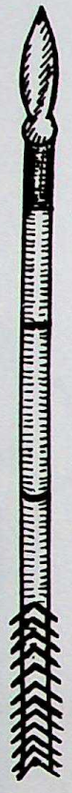


Fig. 107 Feathered arrow, leaf-shaped point.

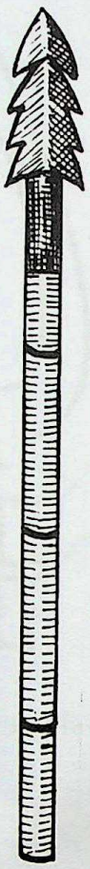


Fig. 108 Arrow with serrated edges, reed shaft.

Fig. 109 *Ṭukkā*, headless arrow mainly used in practice archery.

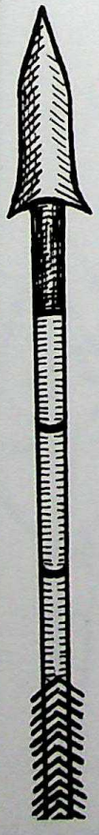


Fig. 110 Feathered arrow, spear-head-shaped head; for big games.

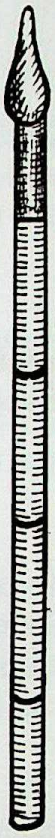


Fig. 111 Arrow for small game, oval-shaped head, reed shaft.

Fig. 112 Arrow with triple head, reed shaft.

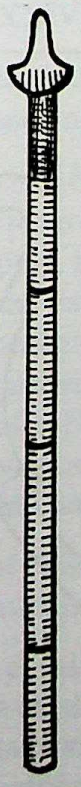


Fig. 113 Arrow with pear-shaped head, used for training and practice.

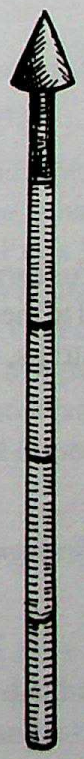


Fig. 114 Arrow having a triangular blade, reed shaft, used in small games.

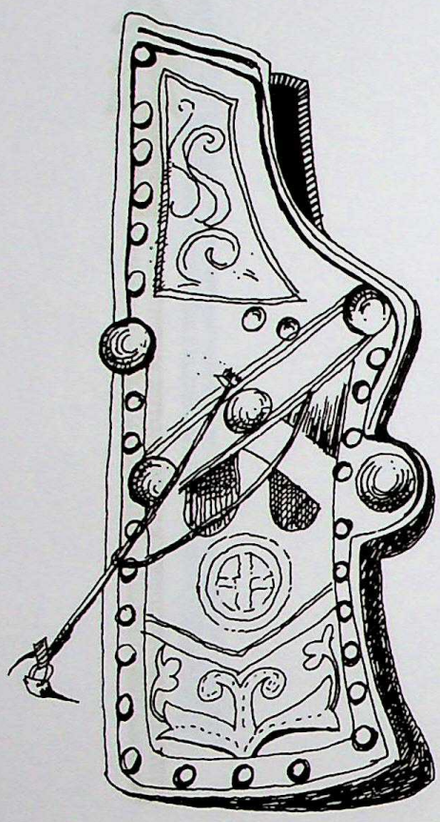


Fig. 115 *Qirbān* for carrying the bow, profusely ornamented, Mughal, 17th century A.D.

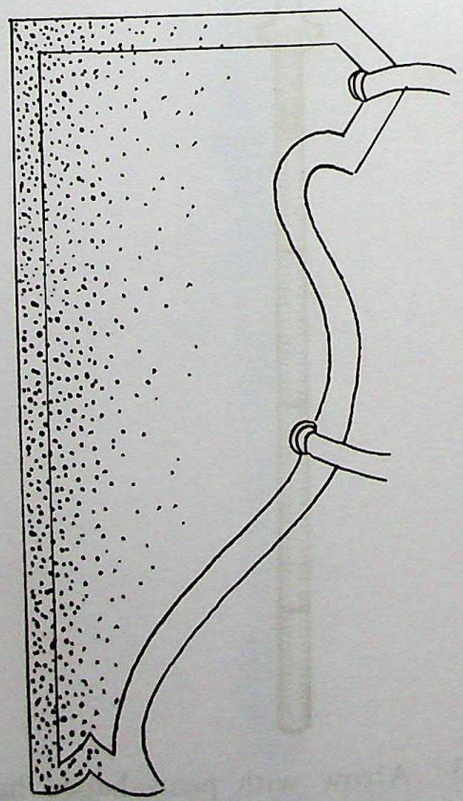


Fig. 116 *Qirbān* for carrying the bow. It was fastened to the saddle with the help of two straps, partly visible.

3. *Bracer*:

It is also called archer's guard and was a covering for the left arm to protect it. These were made of leather, silver, horn or ivory.[40] The one used by the Mughal cavaliers was called *godhā*, and was a kind of leather sleeve. It was used only when the shooter was not in armour.[41]

4. *Tip and Tab*:

Small leather pieces known as 'tips' were used to protect the finger tips. These tips fitted the fingers perfectly. Then there was 'tab' usually made of two pieces of leather sewn together, the portion which held the string being of horse-butt and that through which the fingers passed, of a more supple kind of leather.[42]

5. *Archer's Ring*:

These are called *sefin* or *zihgir*. Sometimes two thimbles, instead of a *zihgir*, were worn on the fore and the middle fingers of the right hand. In order to prevent the flesh being torn by the bowstring such broad rings were worn on the right thumb.[43] An archer could shoot the arrow to a longer distance if he wore the *zihgir*, but it required skill and practice.

6. *Gosha-gīr*:

It was an implement for making good a warped bow-tip and for holding the string into a displaced notch.[44] It is also known as the *chapras*, brooch, buckle or *kardang* and is said to bear these names because it fastens in the string.[45]

SWORD (Pl. LXXIV) :

This was also the favourite weapon of the horse-riders (fig. 122). About his battle with Tambal, his one time friend and later enemy, in Farghana in 1508 A.D., Bābur says,

"Tambal moved forward. The high road was between us; I from my side, he, from his, got upon it and came face to face, in such a way that his right hand was towards me, mine towards him. His horse mail excepted, he was fully accoutred; but for sword and quiver, I was unprotected. I shot off the arrow in my hand, adjusting for the attachment of his shield, with matters in this position, he shot my leg through. I had on the çap of my helm; Tambal chopped so violently at my head that it lost all feeling under the blow. A large wound was made on my head, though not a thread of the cap was cut. I had not bared my sword, it was in the scabbard and I had no chance to draw it. Now single-handed I was amongst many foes. It was not a time to stand still, I turned rein. Down came a sword again, this time on my arrows".[46]

The battle of Pānīpat is depicted on folio No. 260 of the illustrated copy of the *Bābur-nāmā*.[47] Bābur is seen with his mounted archers, swordmen and matchlockmen.

A Marāthā cavalier depended mainly on his sword. Henry Gross says "The muskets and matchlocks were used chiefly in bush-fighting where they have made a discharge, they retreat in a hurry to their main body. But their cheif dependence is on their swords and targets. Their swords, are, generally speaking, of an admirable temper, and they are well trained up to the exercise of them;

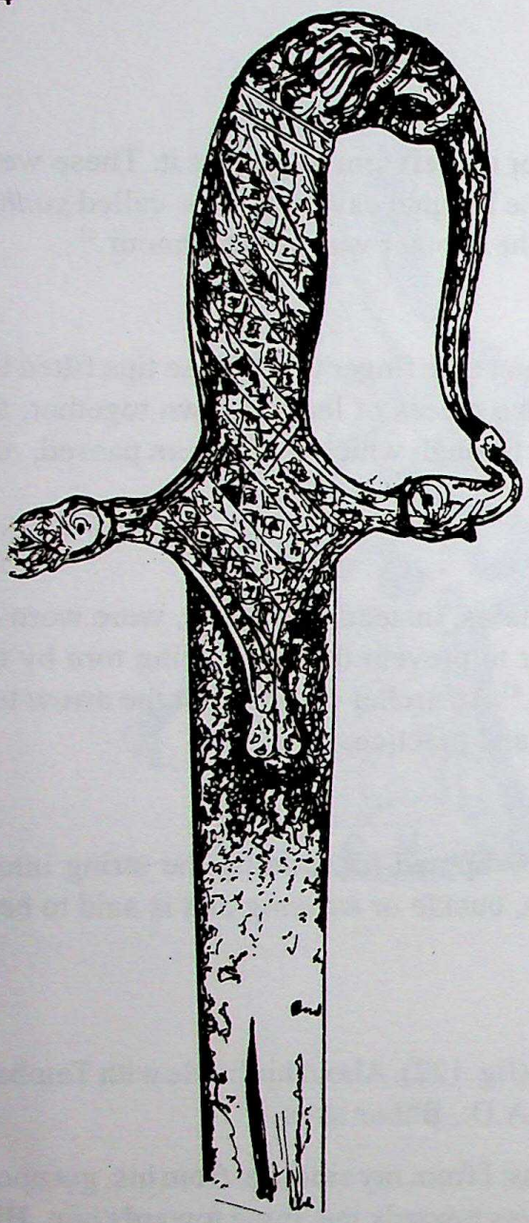


Fig. 117 *Gajamukhī* hilt, the pommel and both the quillons are shaped like the elephant heads. The trunk forms the knuckle-guard, Rajasthan, 18th century A.D.

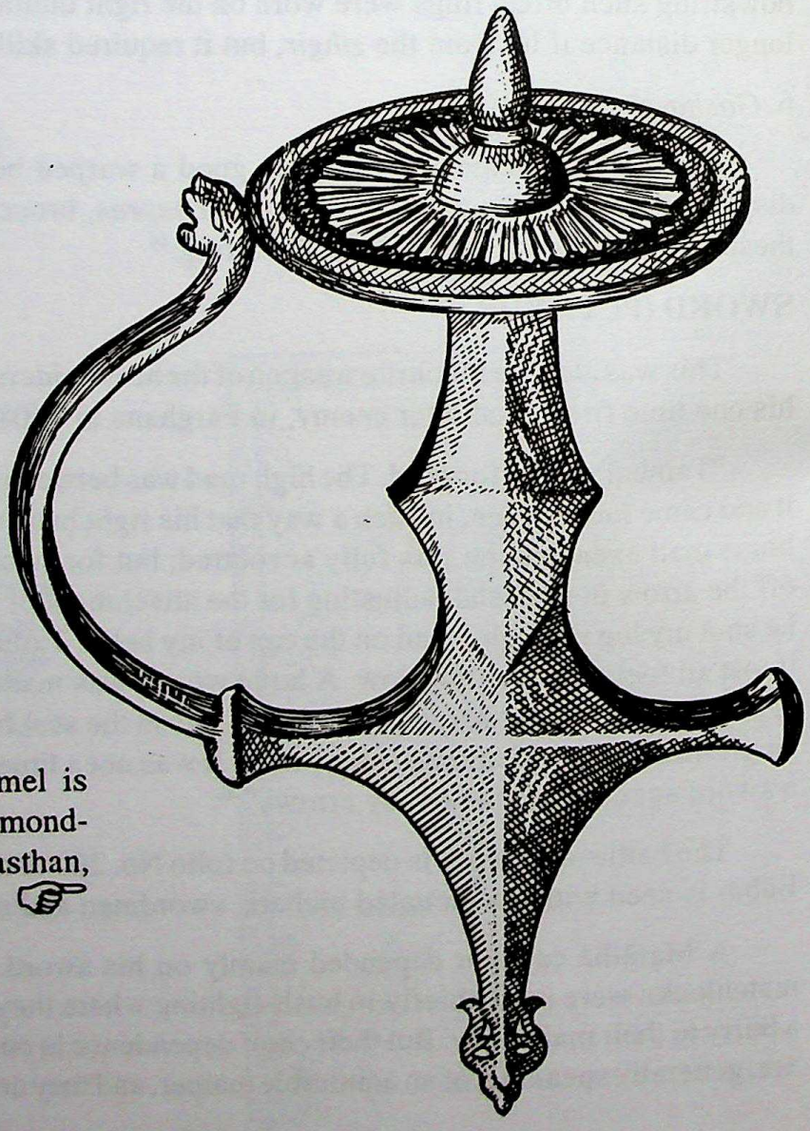


Fig. 118 *Shāh Jahānī* hilt, the pommel is round, flat and big; diamond-shaped grip, Udaipur, Rajasthan, 17th century A.D.

so that on all occasions of battle they quit their muskets, and betake themselves to them with great success".[48]

Some notable varieties of swords used by the cavaliers are as follows:

1. *KILIJ*:

It was a Turkish sabre. Its blade was broader, shorter and less curved than that of a *shamshīr*. Its hilt was pistol-shaped with two pieces of horn, ivory, wood, metal or stone being fastened to the flat tang. The wooden sheath had two sling loops and the weapon, when not in use, was hung in front of the wearer with the edge upwards, by cords.[49]

2. *PAṬṬĀ*:

It was the most favoured weapon of the Marāthā horseman. It had a long, flexible, regularly tapering blade and a huge gauntlet hilt.[50] The hilt covered the arm almost up the the elbow. It was exclusively meant for the cavalry and was used as a lance from the horseback for which purpose its great length made it available[51] (fig. 119).

3. *SHAMSHĪR*:

It was originally a Persian sword with a perfect curve for a draw-cut. Its blade was very fine, narrow and thick, invariably of watered steel.[52] The pistol-shaped hilt is simple and light with a single cross-guard with a pommel projecting at one side. The *shamshīr* was carried edge down, hung from the left side of the belt by two slings.[53] Though it was carried by the foot-soldiers also yet its shape suited the horse-riders much more[54] (fig. 122).

4. *YĀTĀGHAN*:

It was a Turkish sabre with an incurved blade. The hilt had no guard and the pommel spread out in large wings. The sheaths of wood were covered with leather. They had no sling loops, being carried thrust through the belt. The Indian *sosun paṭṭā* resembles it.[55]

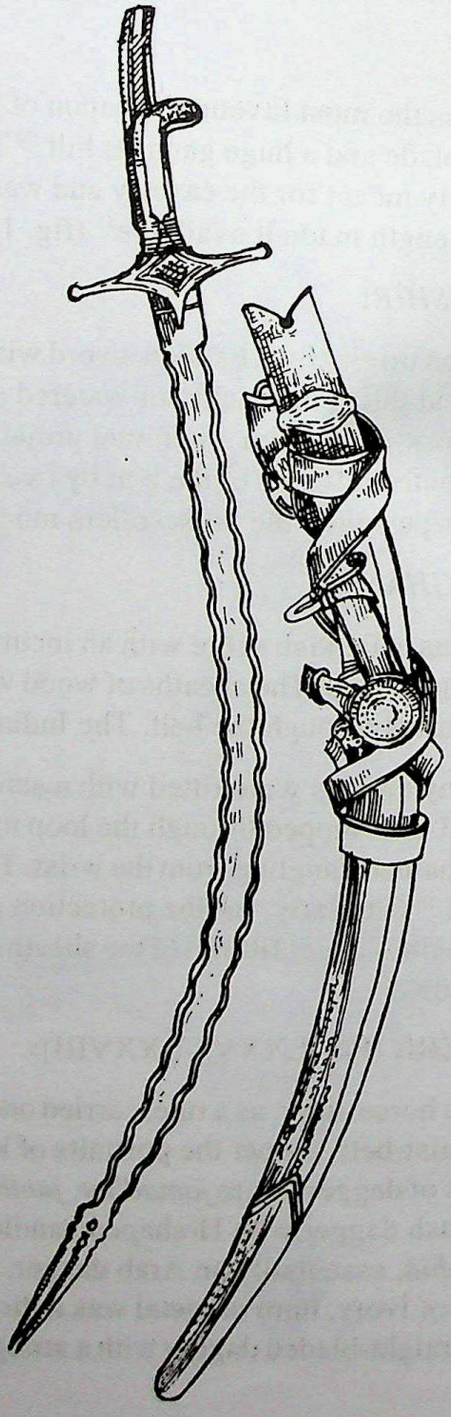
Many swords were fitted with a safety loop fastened to the hilt and known as 'sword-knot'. The hand was slipped through the loop to grip the hilt and should the weapon be slipped from the fist it remained dangling from the wrist. These knots were generally of leather or cord embroidered with *zarī*.[56] Similarly, for the protection of the sheath one small loop called *galtanī* was attached to the *muhnāl* (upper fitting) of the sheath and was fastened to one of the quillons to aviod the sheath falling down[57].

DAGGERS (Pls. LXXV - LXXVIII):

The horse-rider, as a rule, carried one or more daggers with him (figs. 123-128). It was carried in the waist-belt. As per the portraits of knights[58] riding the caparisoned horses, the most popular varieties of daggers were *jamadhar, jambiā, kard* and *khanjar*. *Jamadhar*, a typical Indian weapon, was a push dagger with H-shaped handle and a triangular, double-edged blade.[59] (figs. 129-134) The *jambiā*, essentially an Arab dagger, had a curved blade of fine watered steel, with a mid-rib. The hilt of ivory, horn or metal was delicately carved and sometimes studded with jewels.[60] *Kard* was a straight-bladed dagger with a straight hilt and no guard. The small single-edged blade, often

Fig. 120 *Shamshīr-i-Zulfikār*, fine Damascus blade with waved edges, enriched with gold damascening at the hilt and point, the latter bifurcated for about 5 inches. Black leather scabbard with steel mounts, 17th century A.D.

Fig. 119 *Paṭṭā*, straight blade, long gauntlet hilt enriched with figures of animals, birds and other ornaments chiselled in low relief. Total length 4'5", blade 3'2" Lucknow, 17th century A.D.



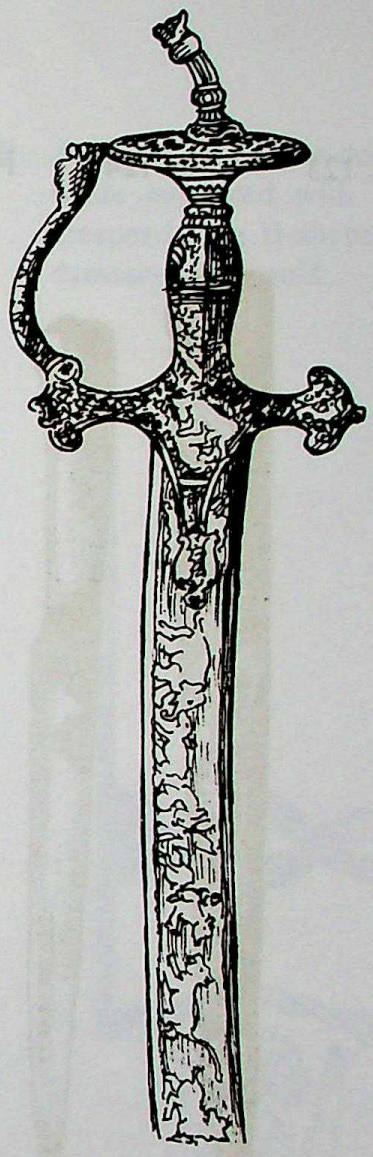


Fig. 121 A *talwār* having a hilt profusely damascened in gold all over. Entire blade is engraved with hunting scenes, Jaipur, *c* 1725 A.D. ☞

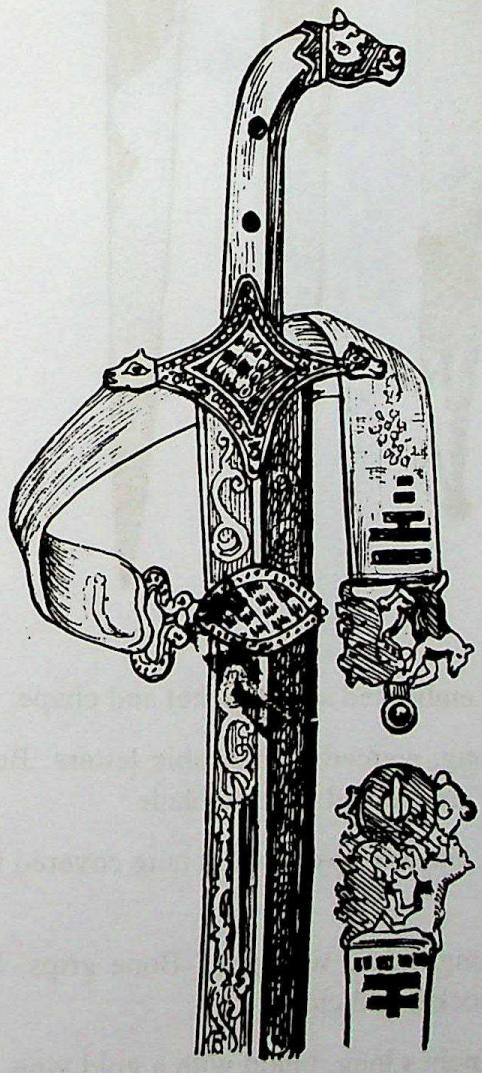


Fig. 122 *Shamshīr*, fine Damascus steel blade, sheath of black leather engraved with frond design. Ivory hilt has a horse-shaped pommel, Jaipur, 18th century A.D.

Fig. 123 Fig. 124 Fig. 125 Fig. 126 Fig. 127 Fig. 128

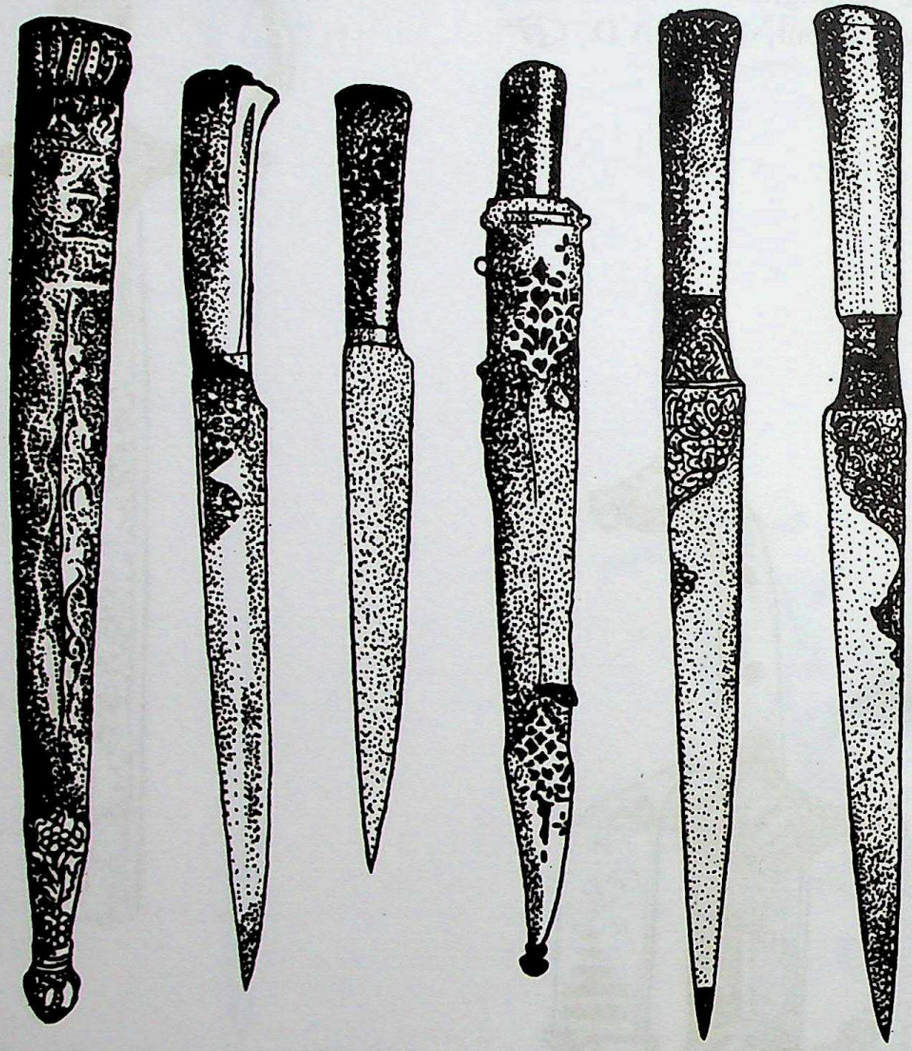


Fig. 123 *Kard's* scabbard, black stamped leather, embossed silver locket and chape.

Fig. 124 *Kard*, watered steel blade, 10 inches long, pierced with Arabic letters. Bone grips riveted to a flat tang, the edges of which are pierced like the blade.

Fig. 125 *Kard*, watered steel blade, 8 inches long, jasper grips on a flat tang covered with gold enamelled in colours.

Fig. 126 *Kard*, watered steel blade, 8.5 inches long, inlaid with gold. Bone grips. Scabbard covered with velvet with pierced silver locket and chape.

Fig. 127 *Kard*, very fine watered steel blade, 11 inches long, inlaid with a gold vine.

Fig. 128 *Kard*, watered steel blade, 9.5 inches long. The blade and the tang are heavily inlaid with gold. Ivory grips.

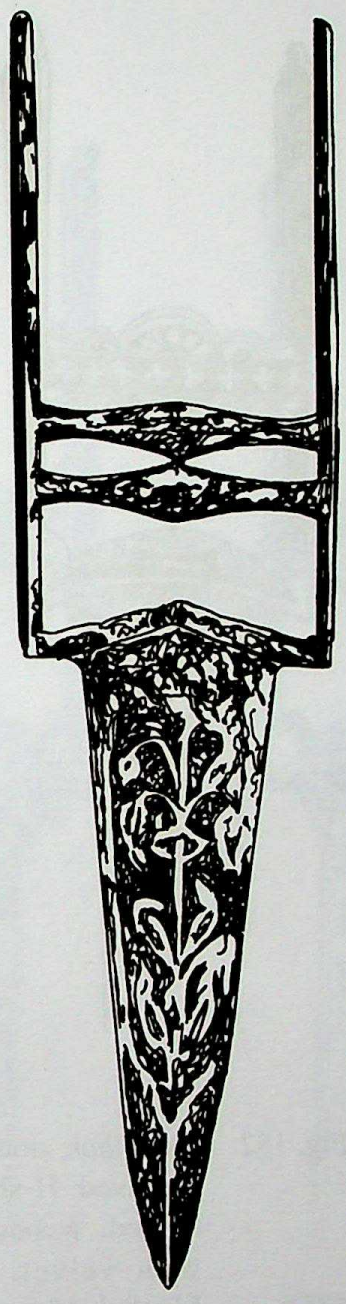


Fig. 129 *Jamadhar*, triangular, double-edged blade engraved with floral and creeper design. H-shaped handle is damascened in gold.

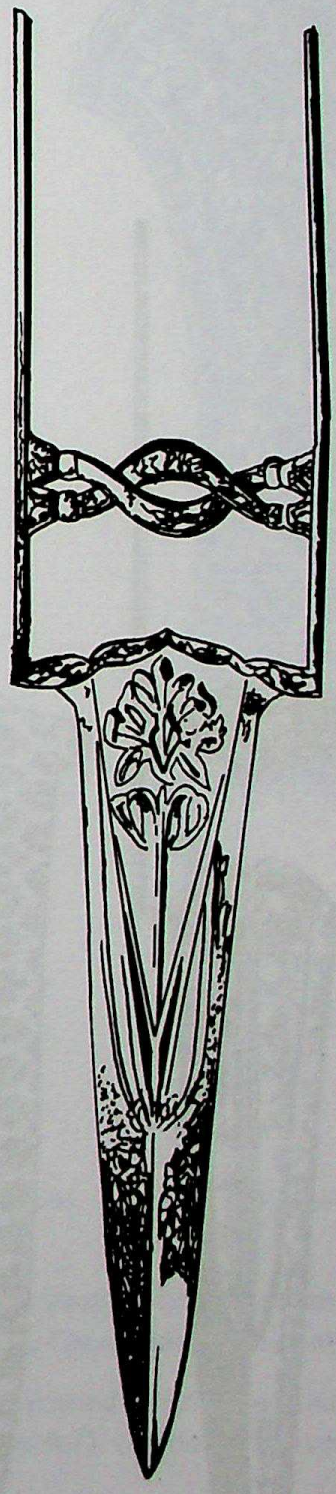
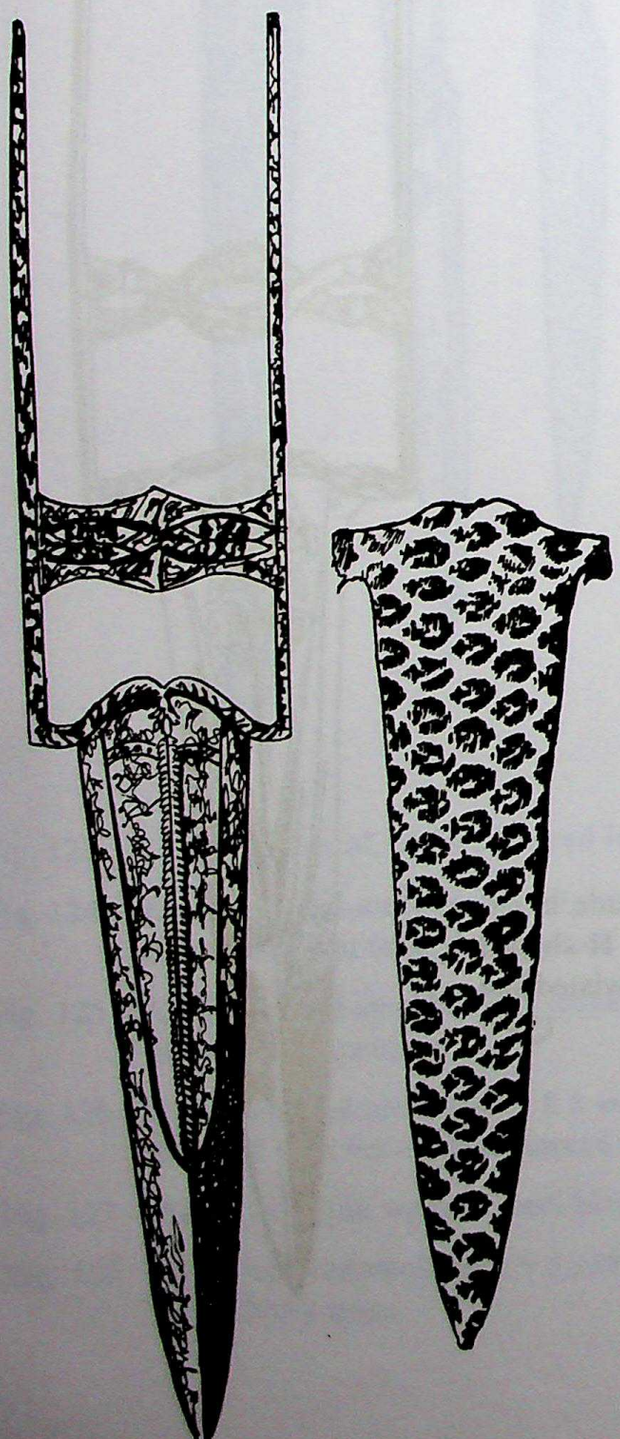


Fig. 130 *Jamadhar*, triangular blade is engraved with a flower; H-shaped handle's cross-bars are twisted like two snakes.

Fig. 131 Hilt and upper part of the blade of a *jamadhar* tastefully decorated and perforated, Tanjore, Tamilnadu, 17th century A.D.



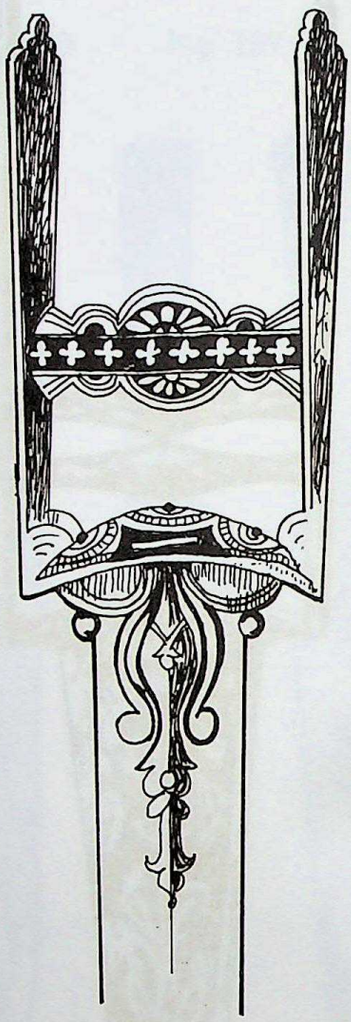


Fig. 132 *Jamadhar*, double-edged blade is engraved. H-shaped hilt is damascened; wooden sheath, covered with velvet, is embroidered, Mughal, 17th century A.D.

Fig. 133

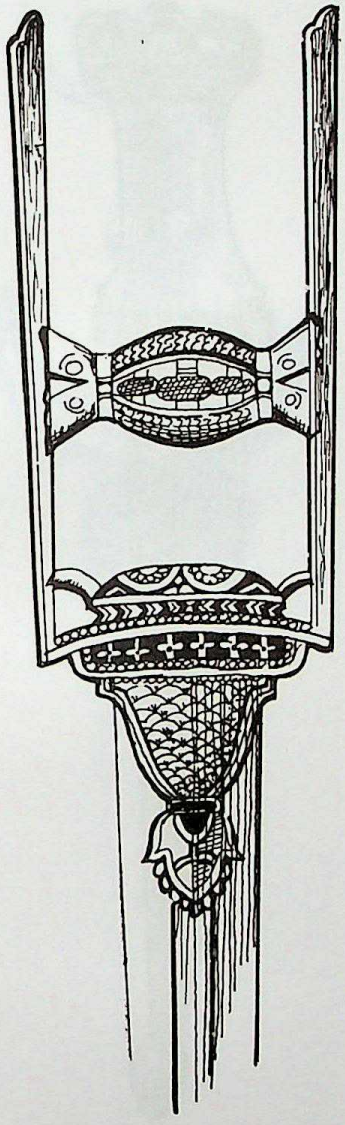


Fig. 134

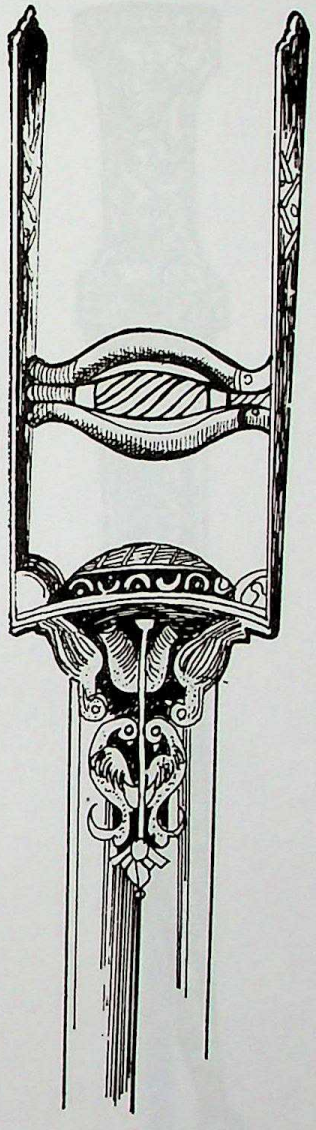


Fig. 135

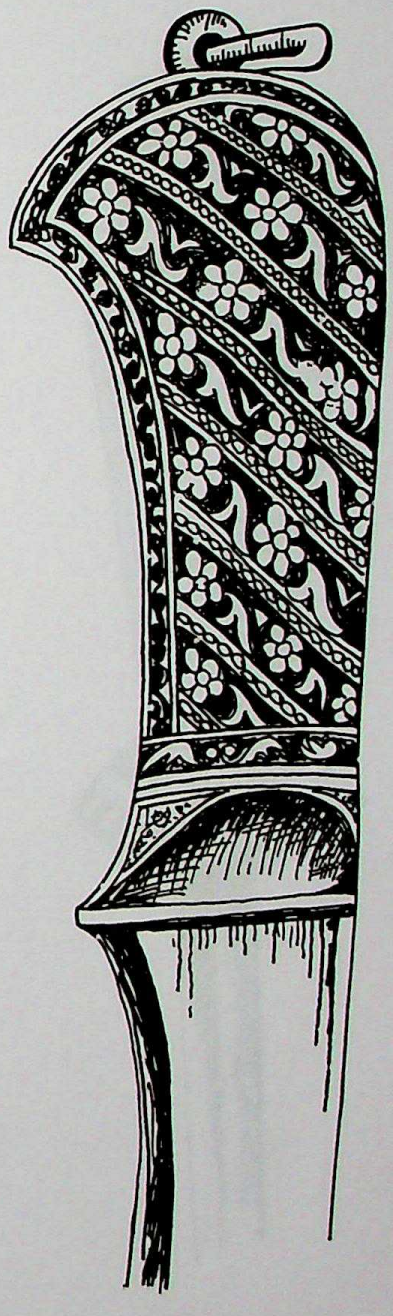


Fig. 133 Hilt and upper part of a *jamadhar*, profusely ornamented, Tanjore, Tamilnadu, 17th century A.D.

Fig. 134 Hilt and upper part of a *jamadhar*, the cross-bars are shaped like a human eye, the portion near the tang is profusely ornamented, Tanjore, Tamilnadu, 17th century A.D.

Fig. 135 Hilt and upper part of Afghan knife. The hilt is damascened in gold in frond design. Drawn from an actual specimen, Mughal, 17th century A.D. (National Museum, New Delhi Collection).

Fig. 136

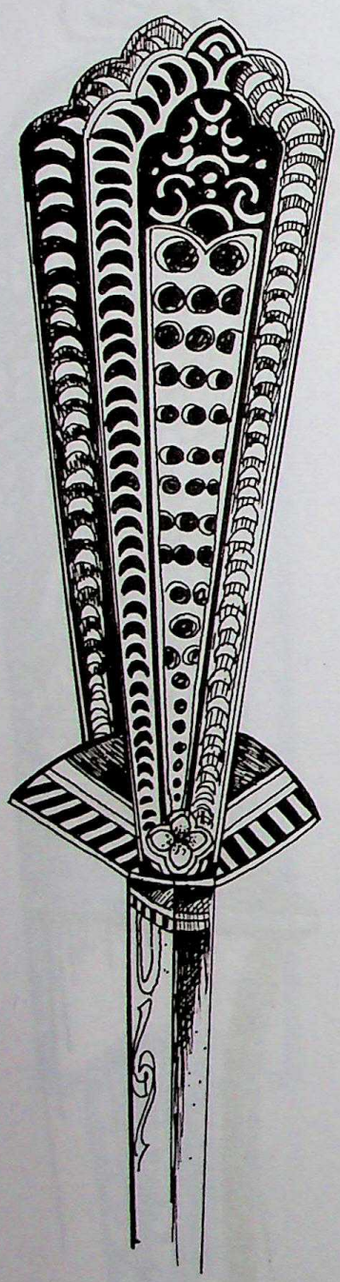


Fig. 137

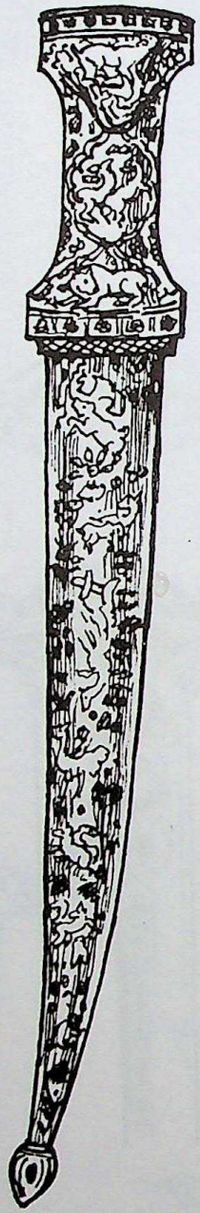


Fig. 138

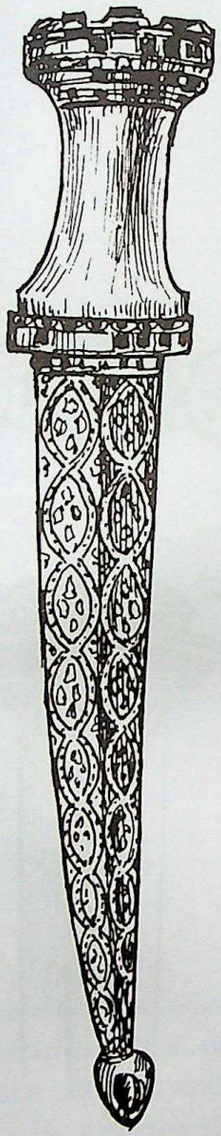


Fig. 136 Hilt and upper part of a *jamadhar*. The hilt, visible from the side, is profusely engraved and perforated. Tanjore, Tamilnadu, 17th century A.D.

Fig. 137 Dagger

Fig. 138 Straight dagger, ivory hilt whose pommels and base are set with emeralds; wooden sheath covered with velvet and embroidered with gold threads, North India, 17th century A.D.

Fig. 139

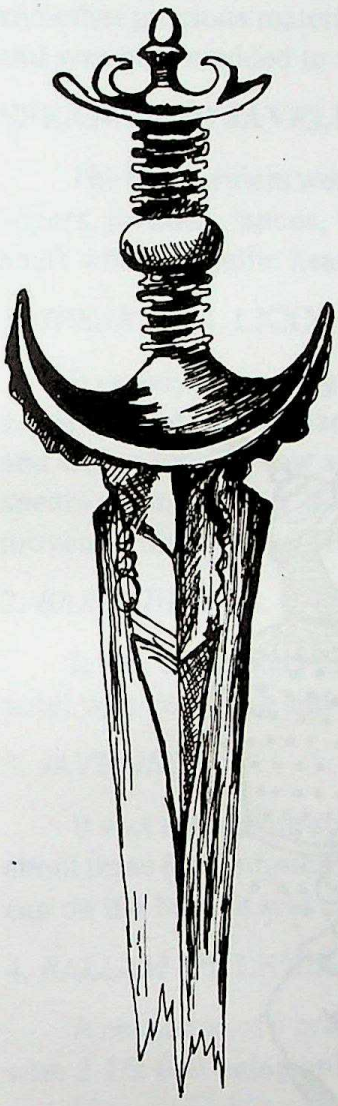


Fig. 140

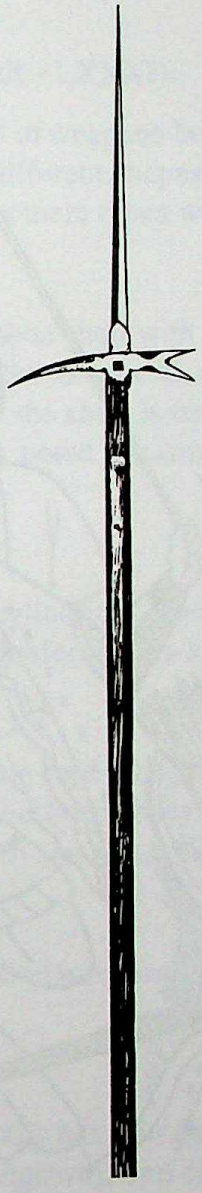


Fig. 141

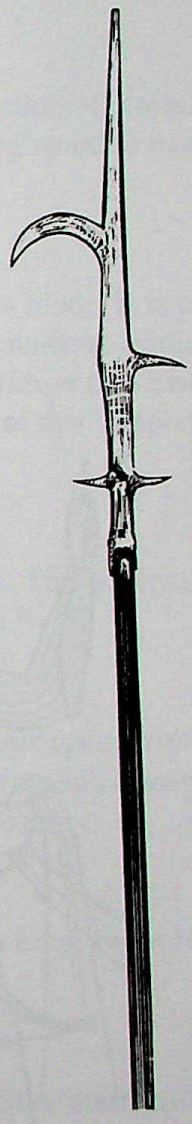


Fig. 139 Hilt of the Nair temple sword. The grip is round and has a knob in the middle. It has long upcurved flange quillions and two crescent-shaped pommel with a steel.

Fig. 140 *Chugā* with a spear-head attached. Plain wooden handle.

Fig. 141 Harpoon-like blade with small blades projecting on both sides. Plain wooden handle.

Fig. 142 Armoured warriors carrying sword, shield, quiver filled with arrows, bow inside *qirbān* and a spear. Mughal, 17th century A.D.

of watered steel, had a thickened point. The hilt was made of precious stone or ivory.[61] (Figs. 123-128) *Khanjar* had a double-edged, slightly curved blade of fine forging of watered steel, often finely carved.[62] The hilts of *khanjar* are perhaps the finest[63] and were made of walrus ivory, jade, crystal and other precious material. The wooden sheath covered with velvet was mounted with jade, etc., and was also studded to match the hilt[64].

SPEARS AND JAVELINS (Pls. LXXIX - LXXXI):

The horse-riders were specially fond of weapons belonging to the generic class of projectiles: spears, javelins, lances, with blades of different shapes. Ususally it had a long wood or bamboo shaft with a metallic head. The following main types were widely prevalent:

1. *SPEAR* [65] (Pl. LXXXI):

It consists of a long wooden or bamboo shaft with a long and pointed iron blade. It is called *bhālā* or *bhalla*. The blade is broader at the lower end, double-edged, with or without medial-rib and with a long hollow shank into which the shaft is inserted[66]. In the *Āin-i-Akbarī* five kinds of spears are mentioned. Rāṇā Pratāp was a noted spearman. The effectiveness of this weapon was proven in the battle of Haldīghātī.

2. *BARACHHĀ* (Pl. LXXX):

It was completely of iron, light and cylindrical. It was griped in the middle. The quadrangular point was very long and sharp. Rājputs preferred this kind of hurling weapon.[67]

3. *JAVELIN*:

It was a throwing spear[68] and has been called *jarid*[69] or *assegaī*. It was a light spear with shaft about three feet long and quadrangular steel head about seven inches long. It often had ornamental cap on the bulb. It was perfectly balanced and could be thrown with great accuracy.

4. *BALLAM* (Pl. LXXIX):

It consisted of wooden shaft and barbed steel head. *Pindī-ballam* was very long, about 10 feet, with 2-1/2 feet being only the blade.[70]

5. *LANCE*:

It was a horseman's spear. It generally has four parts: (i) truncheon (shaft or staff), (ii) head (or point or blade), (iii) vamplate (handguard), and (iv) grate (or grapper or burr). The shaft, measuring 8 to 10 feet, was of wood or bamboo. The head, as a rule, was leaf-shaped with a strong mid-rib. The vamplate was the guard for the hand. The grate was a heavy ring of metal fastened to the shaft just behind the grip. Sometimes the weight of the lance was counter balanced by an ornamental ball and spike on the opposite end. This spike was thrust into the ground when in camp[71]. Some of the parade lances were made of the ivory cylinders strung on a steel rod, and were very decorative.[72]

6. *SAINTIE*:

It was a parrying weapon. It was a straight bar of steel with a loop guard in the middle and a

Fig. 143 Pike, two pointed heads, two small covered blades served the purpose of bridle cutter. Plain wooden handle.

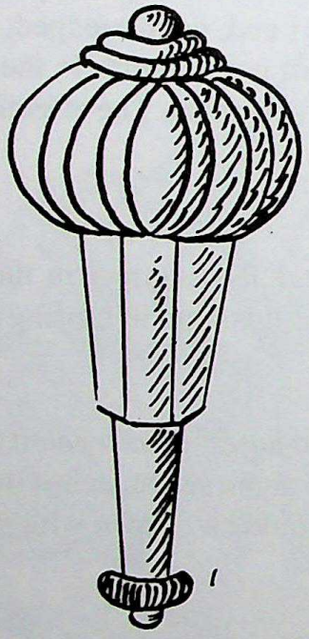


Fig. 144 *Gadā*, huge globular head, handle hexagonal on the upper side and round at the lower end, comparatively short.

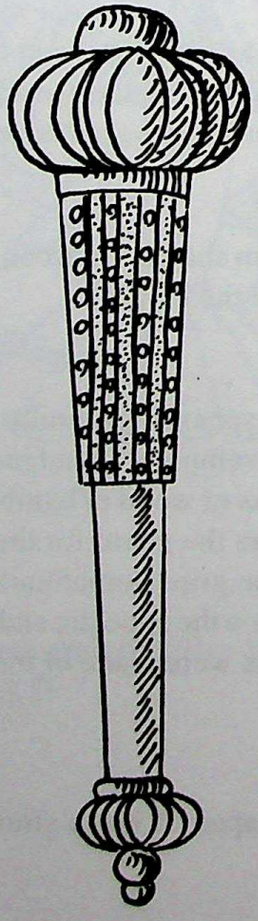


Fig. 145 *Gadā*, globular, ribbed head, the upper half of the handle is tastefully decorated.

spear point on the end. Sometimes a second spear point was placed on the hand-guard or a concealed dagger in the shaft.[73]

These projectiles were specially popular with the horsemen, elephant-riders and also camel-riders. The people of Gujarat used *panjamukh* or five-headed spear. Amīr Khusrau refers to the use of the high *khatāī* spear in Alāuddīn's siege of Somnath and to the 'spearmen of Sind'.

The Marāthā spearmen were called *aitékarī* and were personally selected by the king. The third battle of Pānīpat (1761 A.D.) was a cavalry battle fought with lance and sword on Marāthā side against musketry and archery of the opposing side. Each Marāthā, writes T.S.Shejwalkar, "of note had possibly a hand gun by his side but had neither love for it nor expertness in its use. He preferred lance and spear at a short distance to the clumsy bow and arrow or heavy long matchlocks of those days".[74]

OTHER WEAPONS:

A Turkish and Mughal cavalier had, besides other weapons, also mace (figs. 144-152). *Gadā* consisted of a small steel rod with a single round head; *shashpar* or lung-tearer, an oval-shaped head; *piyāzī* like that of an onion and *gurz* with steel spikes fitted on the globular head[75] (figs. 153, 154, 156, 158) (Pl. LXXXIV).

In Timūr's time we hear of mace-bearers riding horses with golden saddles. In the miniature paintings of the Mughal school warriors are shown using various kinds of maces in battles. One of them was shaped like a bull's head (*amud-i-gāy-sar*).[76]

The Muslim called the axe *tabar* when it had a triangular blade with one cutting edge, and the pointed axe *zaghnol* (lit. "a crow's beak") when its headed was pointed and had two cutting edges (figs. 159-167). A mixture of the two was called *tabar-zaghnol*. The axe fixed to the saddle was called *chamchāq* and the one with which the rein of the opposing horse was cut was called *tabar-zīn*.[77] *Khishī*[78] was a halberd, combining lance and battle-axe (Pls. LXXXV - LXXXVIII).

FIRE-ARMS (Pls. CXI - CXXIII):

Bābur was first to introduce in Northern India the explosive and penetrating fire-arms[79] (as distinct from the mere combustible fire-works used before) and use them in the battles of Pānīpat, Khānwā and Ghāghrā. Between two carts (about 16 yards) there were six or seven *turas* (or mobile breast-works), shields on wooden tripods, behind which matchlockmen[80] were posted to fire. The horse-riders did not use the matchlocks (figs. 174-179). Soon mounted matchlockmen were employed. At the second battle of Pānīpat (1556 A.D.) Hémū had his musketeers mounted on elephants. From Akbar's time onward fire-arms were used from the backs of the horses, elephants, camels and also from the boats. The *Āin-i-Akbarī* refers to *narnāl*[81] and *gajnāl*. Jahāngīr had established the *topkhānā-i-rikāb*[82] (horse-drawn pieces). Aurangzéb had 300 light camels, each carrying a small field piece of the size of a double musket. Bernier speaks of Aurangzéb's horse artillery (*hāzir-i-rikāb*) numbering 50 to 60 pieces and chests of ammunitions mounted on horse-driven carriages. There were varieties of light artillery; [83] swivel guns (*jazails*), tubes of barrels, carried on backs of elephants (*gajanāl* or *hathnāl* or elephant-swivels), or on camels (*shutarnāl* or

Fig. 146

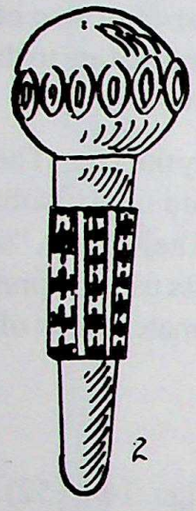


Fig. 147

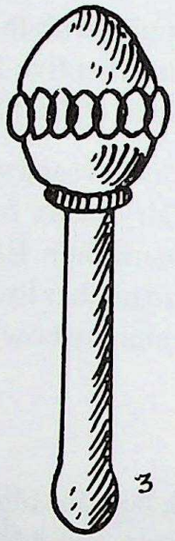


Fig. 148

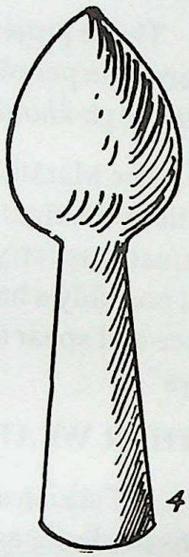
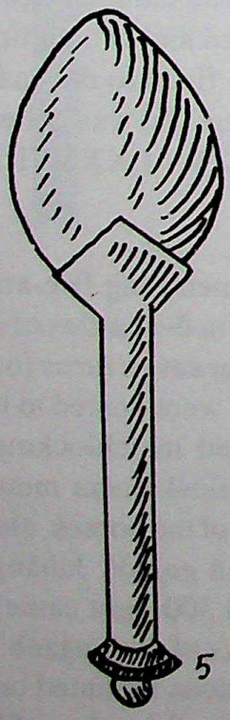


Fig. 146 *Gadā*, globular head, tapering handle, middle part of the handle decorated.

Fig. 147 *Gadā*, oval-shaped head, plain shaft.

Fig. 148 *Gadā*, oval head, plain handle, widening towards the end.

Fig. 149



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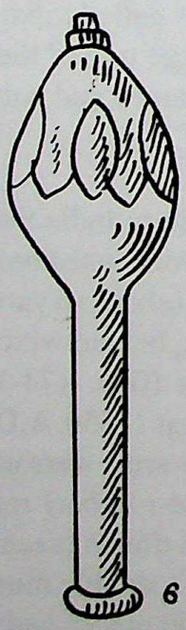

Fig. 151

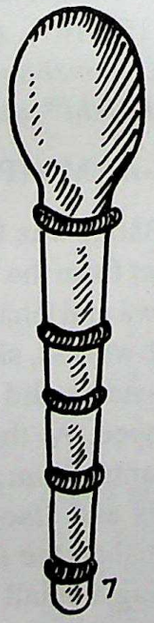

Fig. 149 *Gadā*, oval head, round handle.

Fig. 150 *Gadā*, oval head decorated with applied metallic leaves, plain handle.

Fig. 151 *Gadā*, plain globular head; tapering handle is wrapped with five bands.

Fig. 153

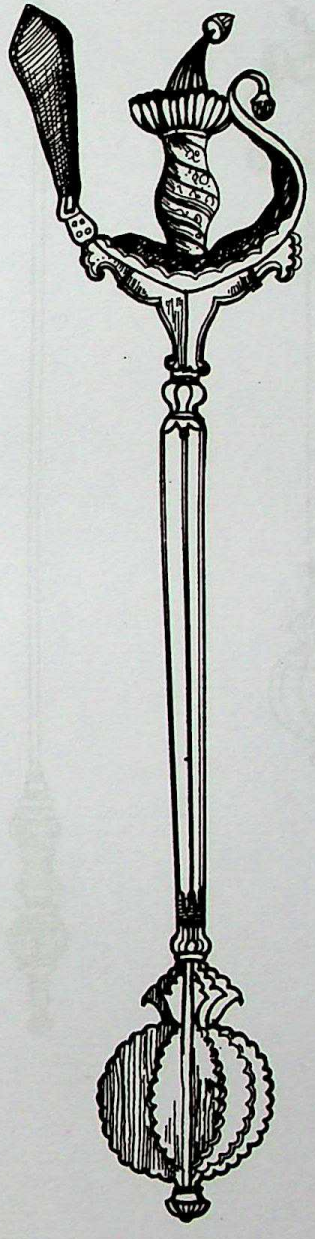

Fig. 154

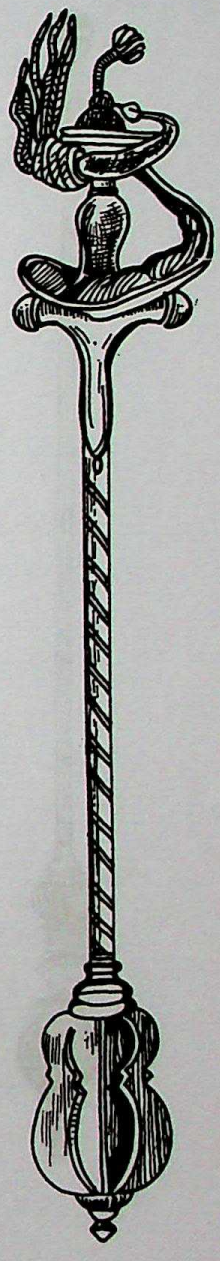

Fig. 152

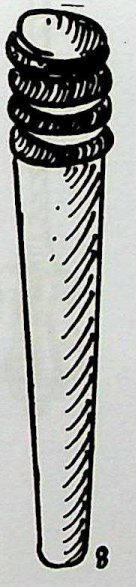

Fig. 152 *Gadā*, head comprising four tiers; tapering plain handle.

Fig. 153 *Gurz* having six flanges surmountd by a knob, ribbed handle terminates into a knuckle-guard, Maharashtra, 16th century, A.D.

Fig. 154 *Gurz* having six flanges, ornamented handle terminates into a sword-like hilt with a knuckle-guard, Maharashtra, 17th century A.D.

Fig. 155

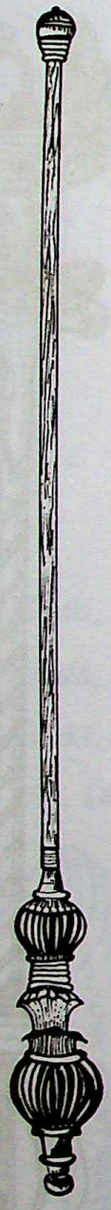

Fig. 156

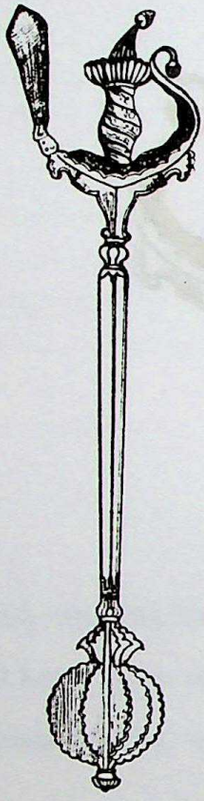

Fig. 157

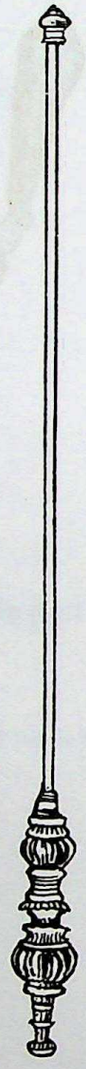

Fig. 158

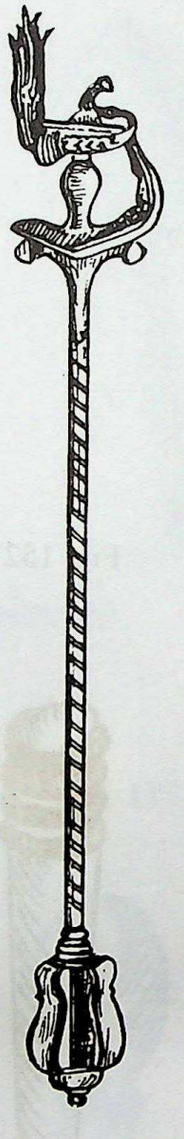

Fig. 155 *Gadā*, two globular heads surmounted by a knob, plain handle terminates in a small knob.

Fig. 156 *Gurz* having six flanges surmounted by a knob, ribbed handle terminating into a knuckle-guard, Maharashtra, 16th century A.D.

Fig. 157 Club, two globular heads, plain metallic handle.

Fig. 158 *Gurz* having eight flanges, ornamented handle, hilt, like that of a sword, has a knuckle-guard, Maharashtra, 17th century A.D.

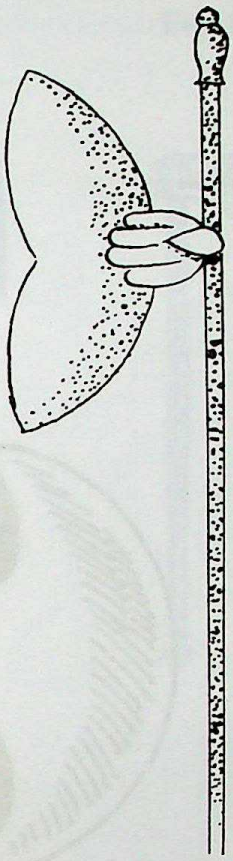

Fig. 159 Battle-axe, bowl-shaped blade recessed inside. It is balanced by a leaf-shaped socket having plain design.

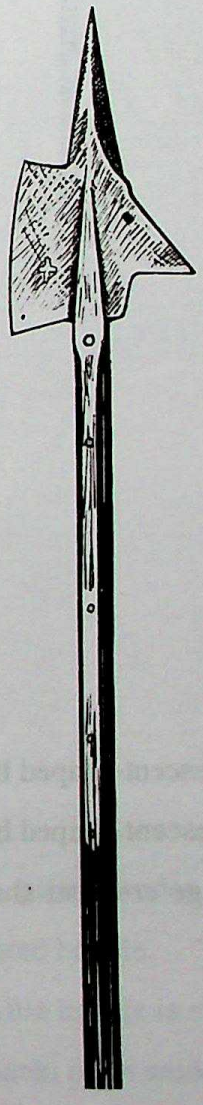

Fig. 160 Pike, spear-head shaped pointed tip, on one side is attached a rectangular blade of a battle-axe and on the other a triangular blade.

Fig. 161

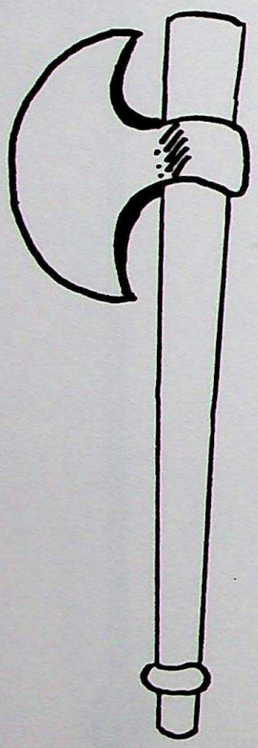

Fig. 162

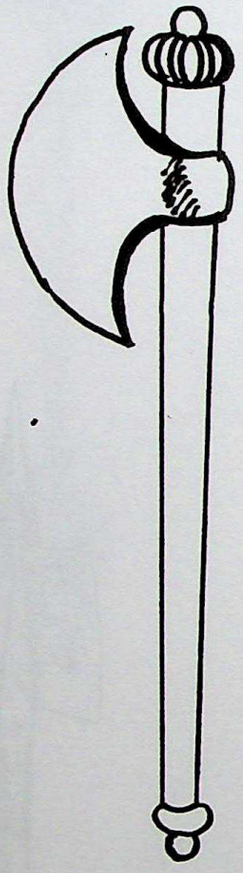

Fig. 163

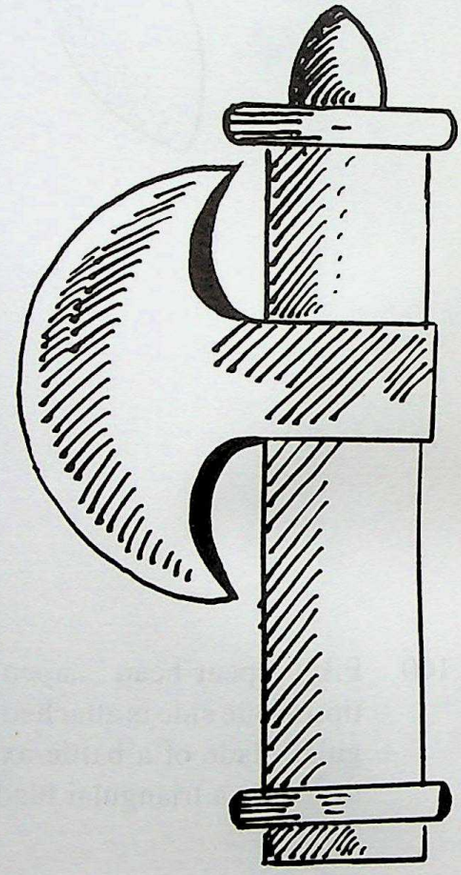

Fig. 161 Battle-axe, crescent-shaped blade, plain tapering handle.

Fig. 162 Battle-axe, crescent-shaped blade, round handle surmounted by a ribbed knob.

Fig. 163 Battle-axe, huge crescent-shaped blade, heavy round handle surmounted by a bud-shaped design.

Fig. 164

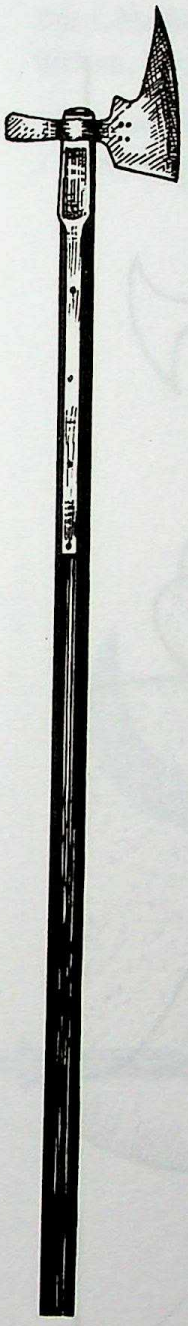

Fig. 165

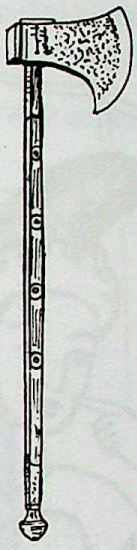

Fig. 166

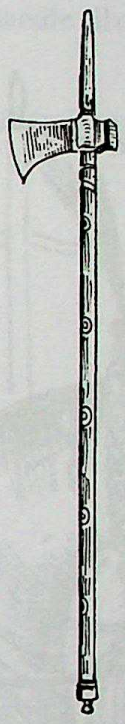

Fig. 167

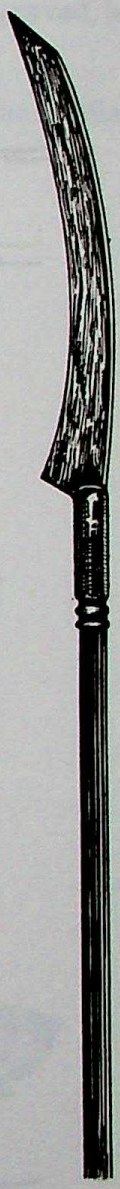

Fig. 164 Battle-axe, cutting edge is pointed upwards, plain wooden handle.

Fig. 165 Battle-axe, crescent-shaped blade, ornamented handle.

Fig. 166 Battle-axe, crescent-shaped blade, the metallic handle is stretched beyond the blade.

Fig. 167 Pike, long, crescent-shaped blade with a shank, plain wooden handle.

Fig. 168 A cavalier by the side of his war-horse. A saddle with stirrups is fastened on the back. The warrior is carrying a battle-axe; Mughal, 17th century A.D.

Fig. 169 *Bānk*, curved blade, metallic handle, Pahārī, length 9 inches, 18th century, A.D.

Fig. 170 *Bānk*, curved blade, metallic handle, Pahārī, length 8 inches, 18th century, A.D.

Fig. 171 *Bhuj*, blade with a panel of chased flower, handle silver-plated and engraved, length 26 inches, Sindh, 17th century A.D.

Fig. 172 *Bhuj*, handle covered with engraved silver, a small knife concealed in the handle, Sindh, 17th century A.D.

Fig. 169

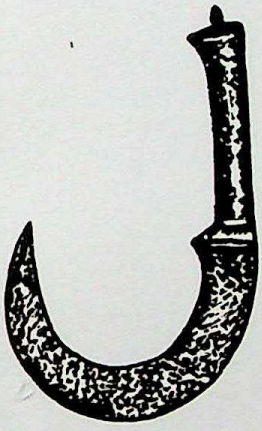

Fig. 170

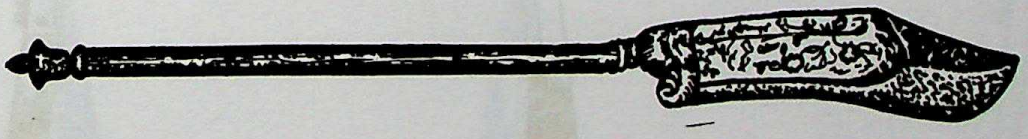

Fig. 171

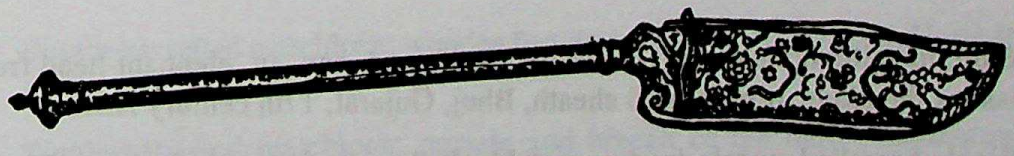

Fig. 172

Fig. 173

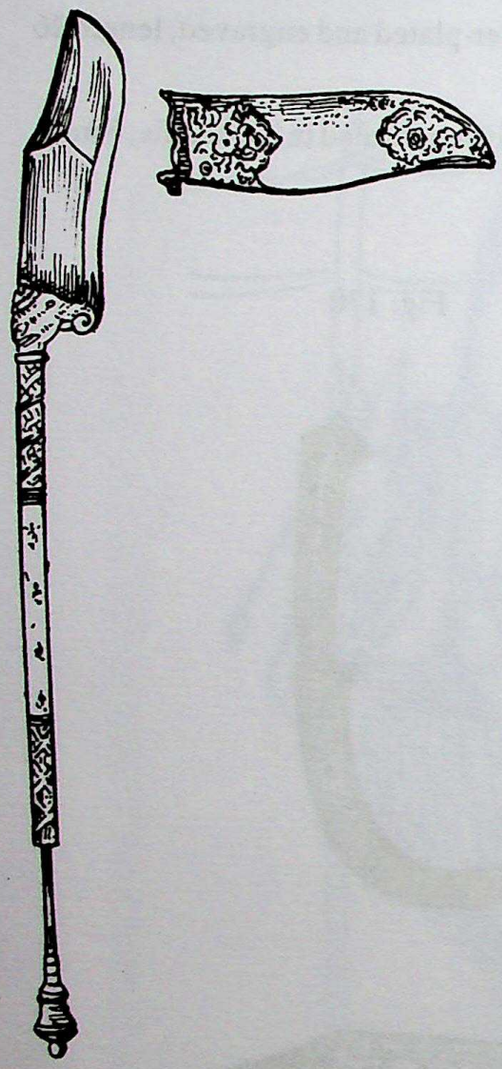

Fig. 174

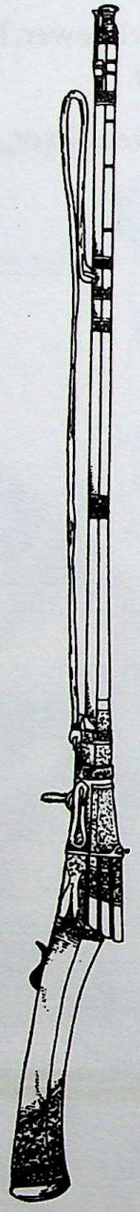

Fig. 175

Fig. 173 *Bhuj*, metallic hollow shaft conceals a knife and has an elephant-head from where issues the blade, ornamented sheath, Bhuj, Gujarat, 17th century A.D.

Fig. 174 Single-barrelled muzzle-loading matchlock; the muzzle and the breech of the barrel are damascened.

Fig. 175 Muzzle-loading matchlock, single-barrelled, barrel profusely damascened all over. North India, *c.* 1650 A.D.

Fig. 176

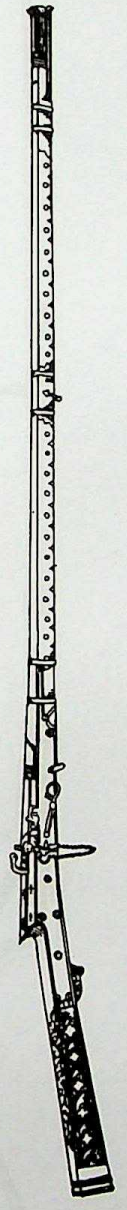

Fig. 177

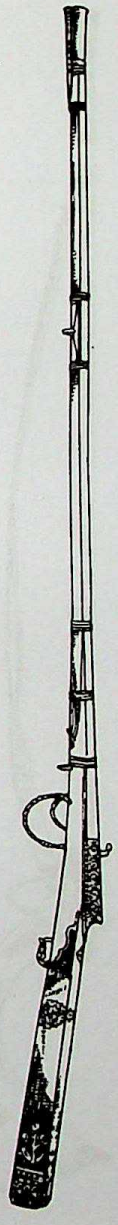

Fig. 178

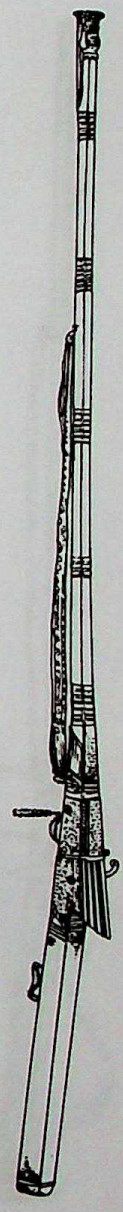

Fig. 176 Single-barrelled matchlock, wooden furniture tastefully decorated, North India, *c* 1625 A.D.

Fig. 177 Single-barrelled matchlock; muzzle and breech of the barrel damascened in gold; wooden stock beautifully carved, North India, *c*. 1650 A.D.

Fig. 178 Single-barrelled matchlock; muzzle and breech damascened in gold. The weapon was hung round the shoulders through a sling, North India, *c*. 1675 A.D.

Fig. 179

Fig. 180

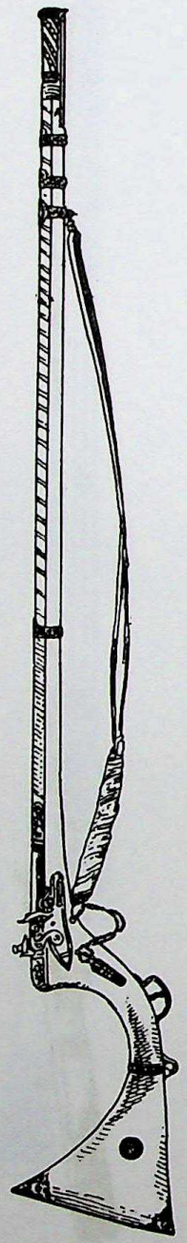

Fig. 181

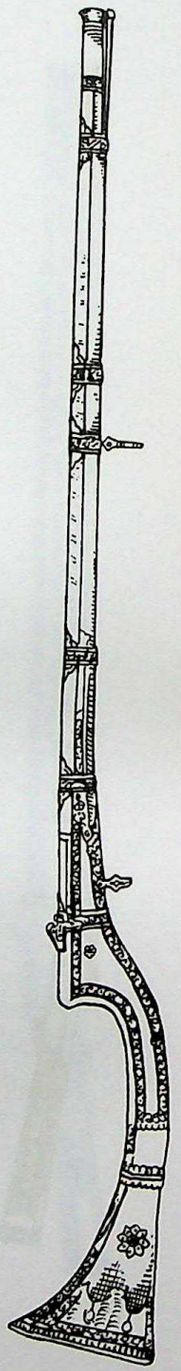

Fig. 179 Single-barrelled matchlock, the barrel engraved all over; the muzzle shaped like a crocodile. North India, 17th century A.D.

Fig. 180 Single-barrelled flintlock; barrel damascened all over; crescent-shaped wooden stock, Sindh, *c.* 1700 A.D.

Fig. 181 Flintlock, single-barrelled, muzzle loading gun; curved butt, muzzle loading rod attached, Sindh, *c.* 1675 A.D.

Fig. 182

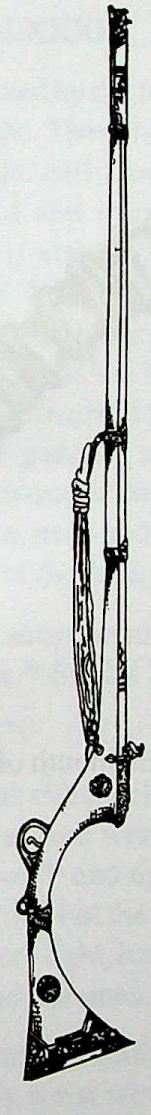

Fig. 183

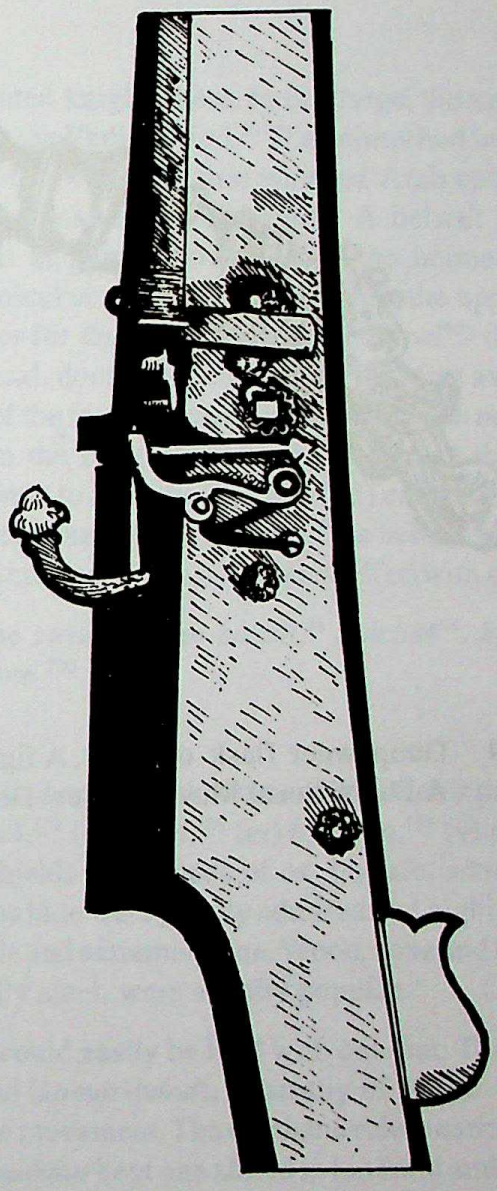

Fig. 182 Flintlock, muzzle and breech of the barrel damascened in gold. Crescent-shaped butt tastefully ornamented, Sindh, *c.* 1675 A.D.

Fig. 183 Details of a single-barrelled, muzzle loading matchlock showing cock, lock plate, method of ignition and trigger, *c.* 1620 A.D.

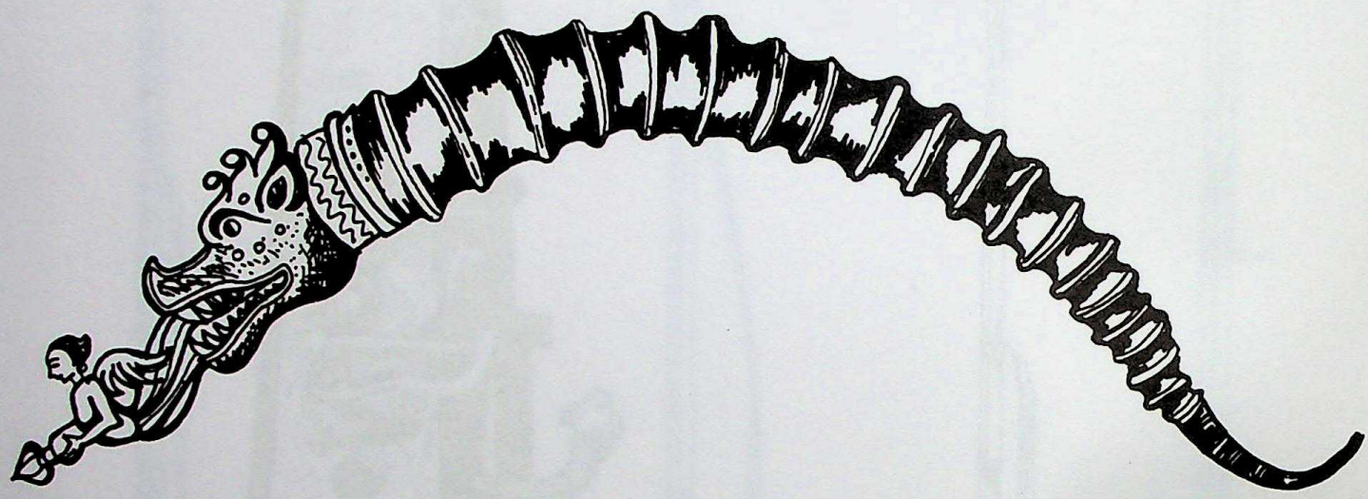

Fig. 184 Gunpowder flask of ivory. A figure issues forth from the mouth of a dragon, *c*. 1650 A.D. (National Museum, New Delhi Collection).

camel swivels), *zambūrak* (wall pieces) or mathclocks carried by one man (*narnāl*)[84]. A number of other guns, bearing various names, were used by the horse-elephant-and-camel-riders[85].

ARMOUR:

1. *HELMET* (Pls. LXXXIX, XC, XCI, XCII):

The armour used by the foot-soldiers or the mounted knights were, by and large, the same with very little distinction. These have been used right from the Vedic period.[86] The helmet had increased in importance in the early medieval period in India following the first wave of Arab conquests. Ghaznavid, Ghurid and Mughal cavaliers[87] made extensive use of helmet. A helmet had the following parts: (i) crest-*kalagī*[88] - (sometimes flat or plume) surmounting the helmet was a decorative symbol, (ii) spike,[89]- bayonet-shaped, conical or cylindrical tube, being the uppermost part of the helmet, sometimes also used as the holder for the crest, (iii) skull or bowl[90]- the most vital part which protects the head and is hemispherical, dome-shaped, oval or flat, (iv) aventail[91] movable front piece, made of mail for the protection of the face, specially when nasal was not there, (vi) nasal or nose-guard[92]- a piece depending from the front of a helmet to protect the nose, (vi) plume holders-one or two tubes fixed to the helmet to hold the plumes, (vii) camail - a guard of mail for the sides, neck and the shoulders, (viii) cheek-pieces, - two sides of the helmet to protect the ears and sides of the face, (ix) padding-inside cushion consisting of cloth stuffed with cotton.[93]

Some of the most popular variants used by the cavaliers are *bayāh*,[94] *chichāk*[95], *kanṭop*,[96] *khud*,[97] *kulah zirah*,[98] Sindhi helmets[99] and many more.[100]

2. *SHIELD* (Pls. CV - CX):

The shield was either held in the left hand or was tied on the back. Some of the shields preferred by the mounted warriors were (i) buckler,[101] (ii) *tilwā*,[102] (iii) *jūnā*,[103] (iv) *khalkha*,[104] (v) *pahrī*,[105] (Fig. 201) (vi) *sipar*[106] and many others.[107] These shields were made of ox, buffalo, *sāmbhur* or *nilgāu* (blue bull) hide but the ones made of rhinoceros hide were greatly admired and highly prized for such shields were light, handy, transparent, durable and extremely fine. Wood, cane and bamboo were also used and the ones made of metal, specially steel, were equally popular.

The shield had two leather loops inside which could easily be held with one fist. The horse-rider hung it by his waist with the help of waist-band (*kamar-band*), generally of cotton. He held both the reins in his mouth to enable the left hand a free movement. The elephant-riders carried more than one shield which were kept in the *howdāh*. The *mahāut* kept one shield in his front and another was fixed in the *howdāh* in front of the knight. Sometimes the cavaliers themselves did not carry the shield but employed shield-bearer *i.e.*, the attendant on foot, carrying the shield of his master on horseback.[108]

3. *ARMOUR FOR BREAST AND BACK* (XCIII, XCIV, XCV, XCVI):

Among the noted specimens of body armour used by the mounted soldiers are *angarakhā*,[109] *chār-āinā*,[110] *sadarī*,[111] *jaibāh*,[112] *bukhtar*[113] and others.[114] The *zirah kurtā* worn by the cavalier was shorter in length. It rested a little below the waist and was made with a cut in the lower part of the back to facilitate mounting and dismounting.

Fig. 185

Fig. 186

Fig. 187

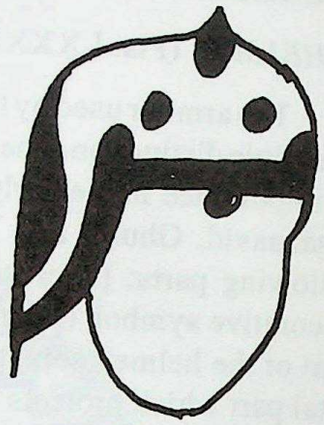

Fig. 188

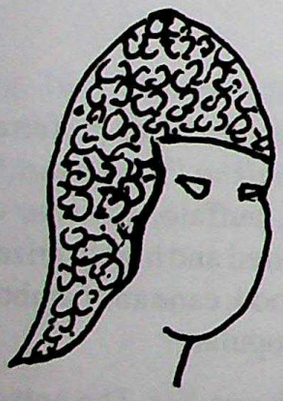

Fig. 189

Fig. 190

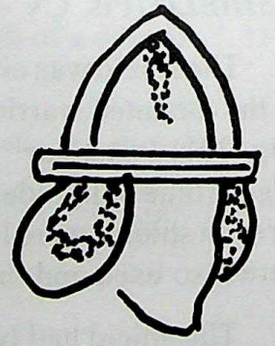

Fig. 185 Helmet with a flat top; the camail of horizontal plates.

Fig. 186 Conical helmet made of segments with a border. The camail is of splints.

Fig. 187 Round, flat, close-fitted helmet surmounted by a small spike and fitted with fluted cheek-pieces.

Fig. 188 Coif made completely of chain mail with camail of the same material.

Fig. 189 Conical helmet of lamellar with a spike. Attached to it is a camail of leather or fabric.

Fig. 190 Oval-shaped helmet with circular cheek-pieces.

Fig. 191

Fig. 192

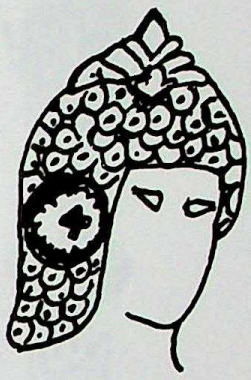

Fig. 193

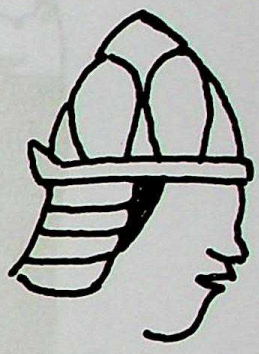

Fig. 194

Fig. 195

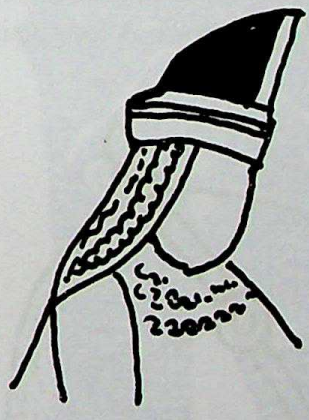

Fig. 196

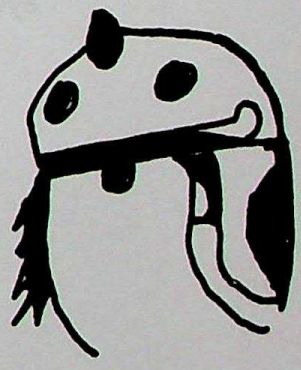

Fig. 191 Round, close-fitted, plate helmet with a flywhisk. Attached to it is a camail of leather or fabric.

Fig. 192 Coif of scale with camail of the same material.

Fig. 193 Conical helmet made of segmented plates with a camail of horizontal plates.

Fig. 194 A fluted plate helmet with camail of splints.

Fig. 195 An elongated plate helmet, tilted towards the left. The camail hangs down.

Fig. 196 Flat, tight-fitted plate helmet with a spike. The cheek-pieces are of the same material.

Fig. 197

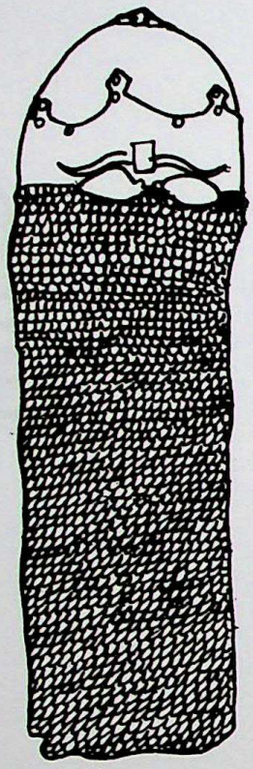

Fig. 198

Figs. 197 and 198 Turko-Indian helmets, hemispherical bowl with cut-outs over the eyes. The eyes have applied eye-brows. A long veil like aventail, 16th century A.D.

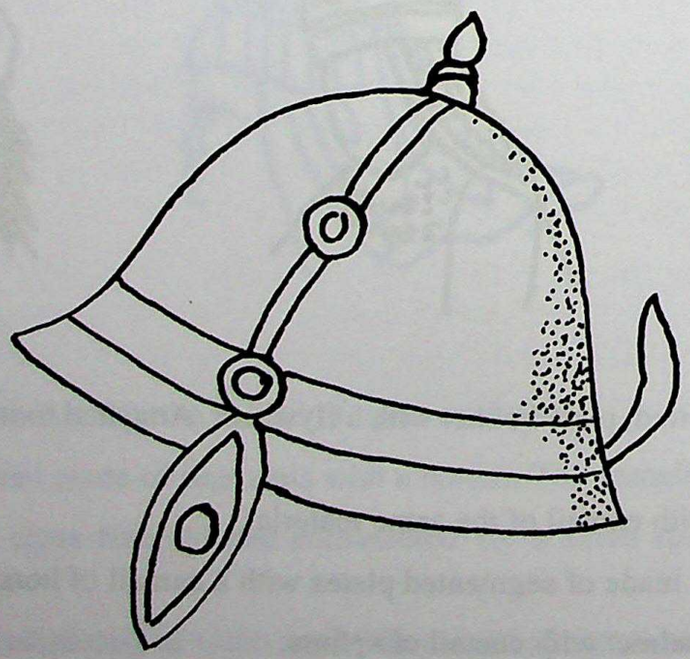

Fig. 199 Chapel, bell-shaped helmet. It is deep and the lower part is wider. The nasal has a leaf-shaped terminal, Jaipur, 17th century A.D.

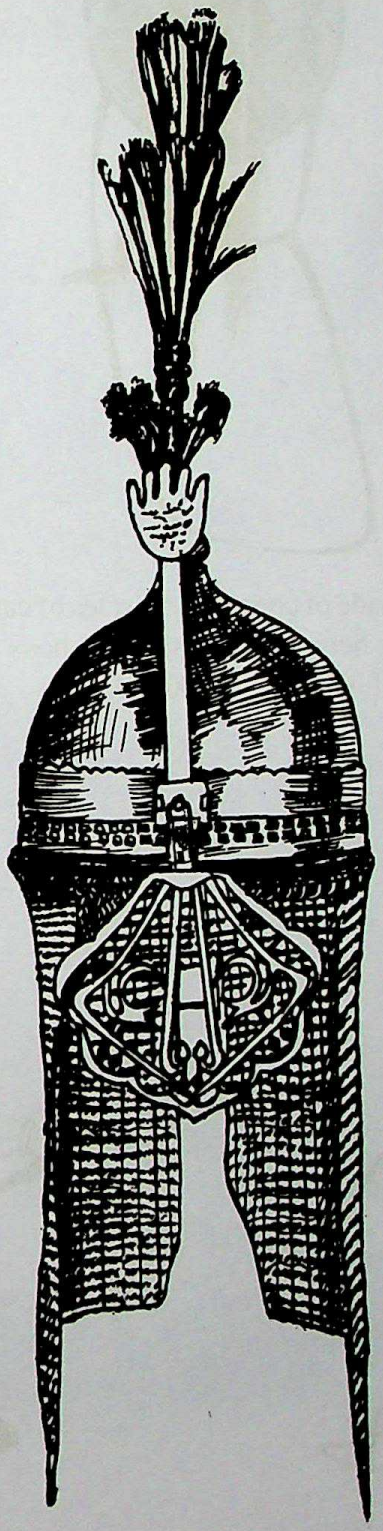

Fig. 200 Helmet, deep oval bowl, upper terminal of the nasal shaped like a palm. A heron feather arranged in three tiers at the top. North India, 19th century A.D.

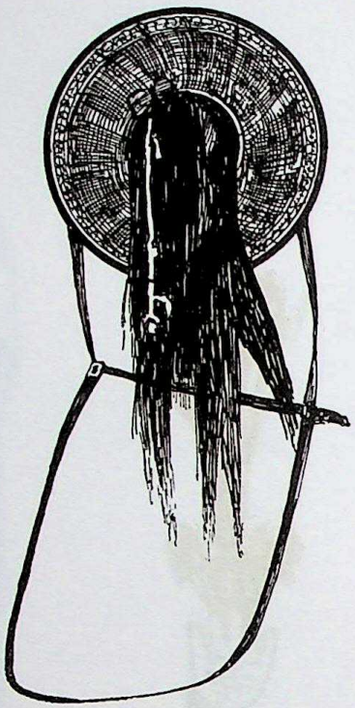

Fig. 201 Mughal *pahrī* shield made of concentric circles of cane with silk woven over it in design. The upper side, visible here, has a central iron boss with a spike surrounded with a silk fringe. A long branded handle, *c.* 1600 A.D.

Fig. 202 Armoured cavalier wearing ribbed helmet and body armour of lamellar.

Fig. 203 A cavalier wearing a ribbed helmet, a coat of lamellar plates and arm-guards, carries sword, bow and quiver. Mughal, *c.* 1600 A.D.

Fig. 204 Waist-coat armour of steel with opening on the front and sides. Inside lining is of stuffed cotton. Lahore, 17th century A.D.

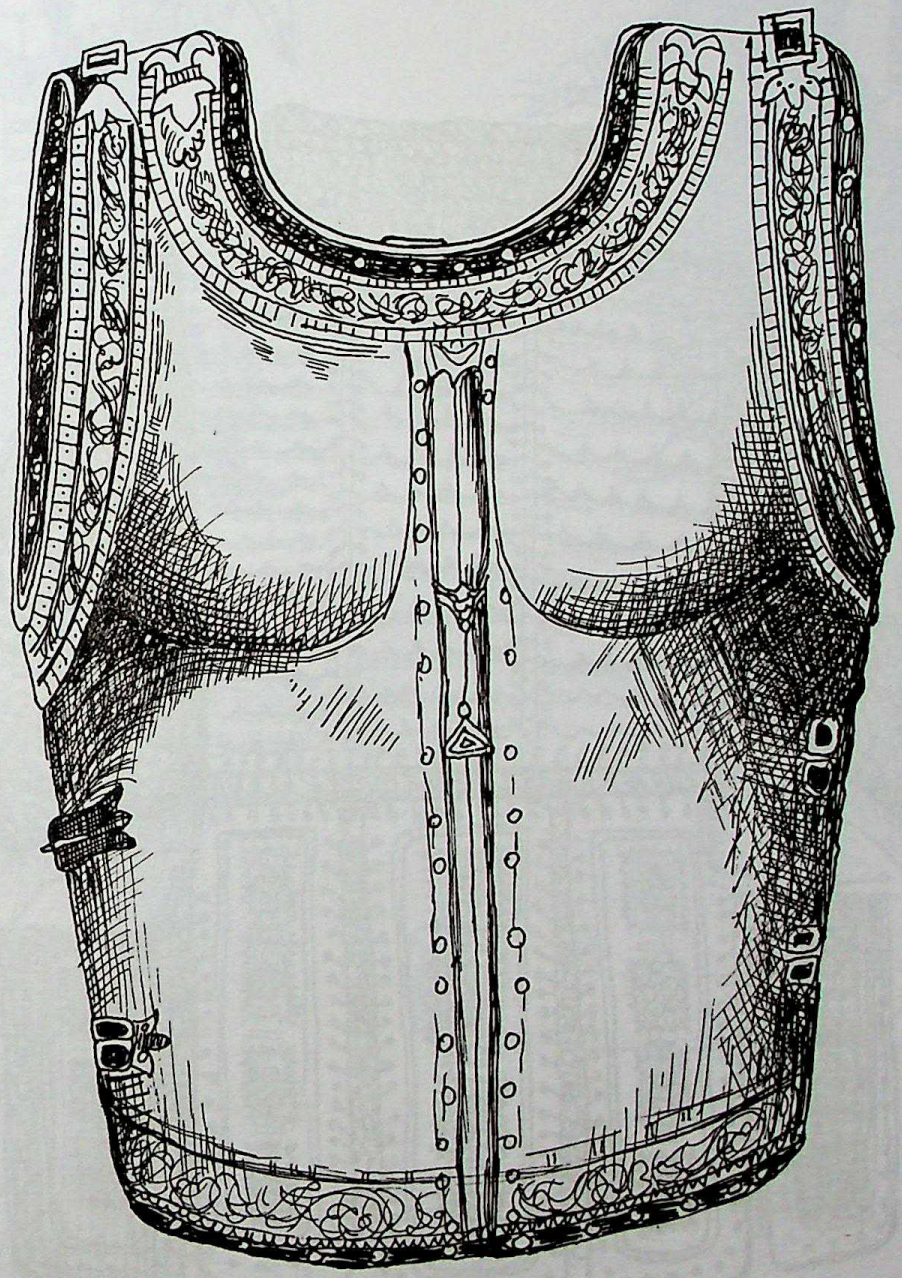

Fig. 205 A variant of coat of mail combined with several plates. The plates are embossed with floral design. Sindh, 18th century A.D.

Fig. 206 Fully armoured knight wearing helmet, body armour, arm-guards, leg-guards, and boots.

Fig. 207 A warrior covered from head to foot with an armour made of scale. Noteworthy are the knee-caps.

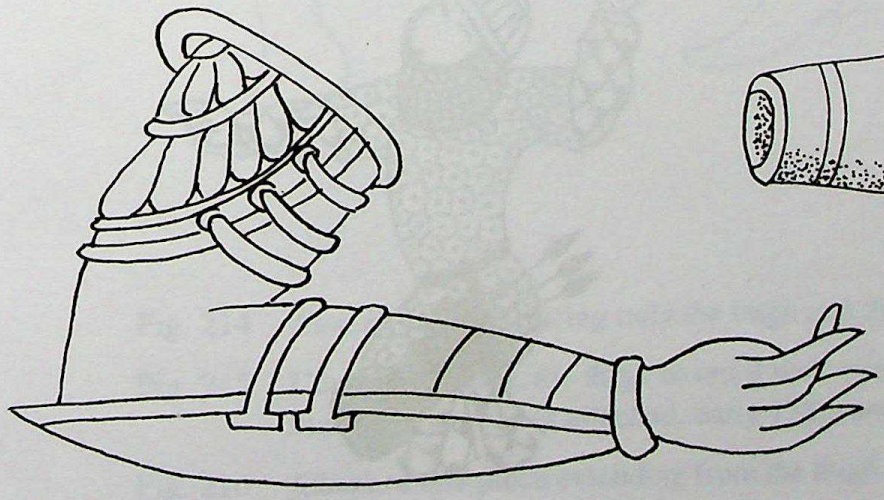

Fig. 208 Wearing of an arm-guard and *bājūband*. The arm-guard is tied with three and the *bājūband* with four straps.

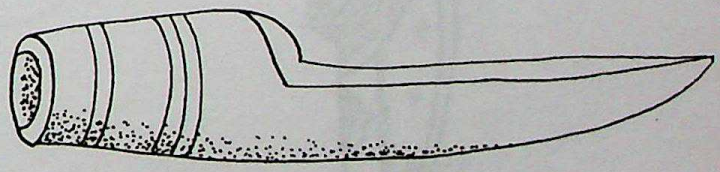

Fig. 209 *Bājūband* made of two pieces of steel, the tubular part covered the wrist and other reached upto the elbow.

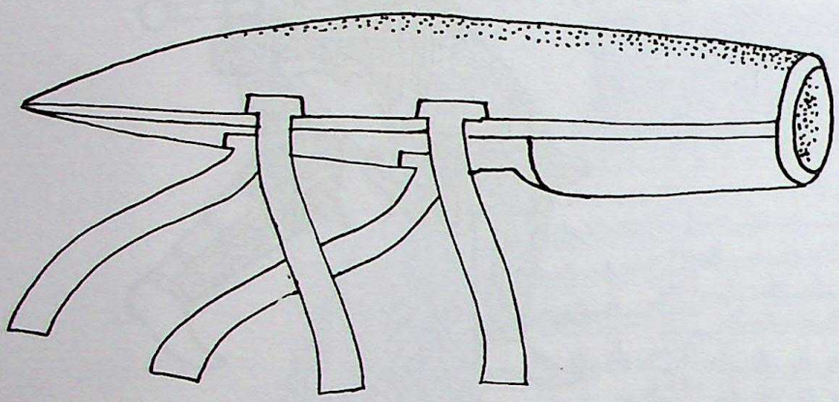

Fig. 210 *Bājūband* made of two pieces of steel hinged together. It was fastened by four straps. Mughal, 16th century A.D.

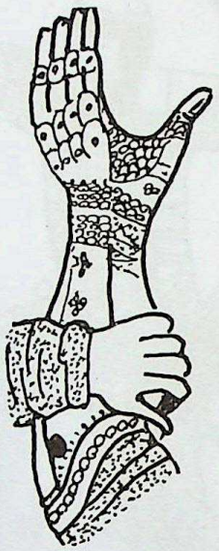

Fig. 211 Articulated *bājūband*, the knuckle part is made of scale.

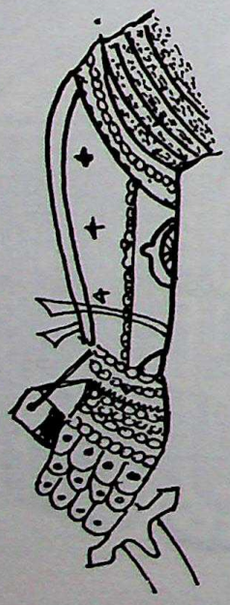

Fig. 212 Articulated *bājūband*, the knuckle part is made of scale.

Fig. 213 A cavalier, fully armoured, wearing a ribbed helmet and a body armour, carries a quiver with arrows.

Fig. 214

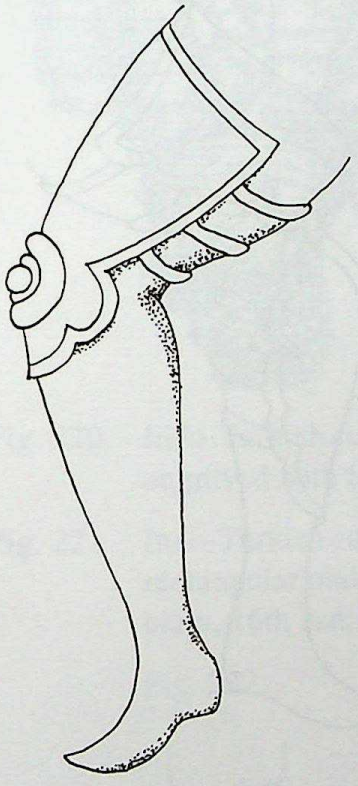

Fig. 215

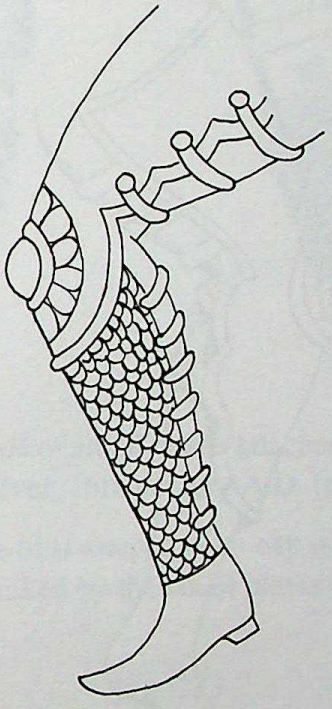

Fig. 216

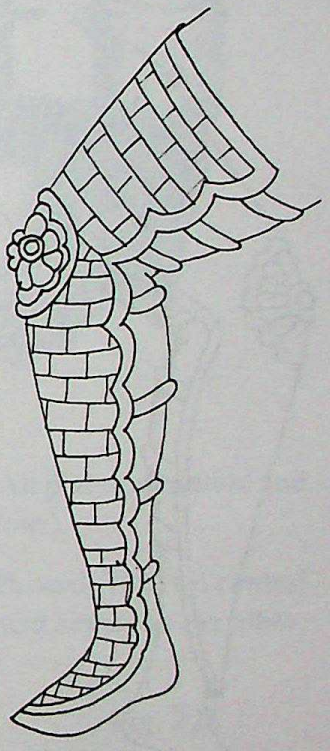

Fig. 214 *Nimcha rānak* covering only the thigh and the knee. It is fastened with three straps.

Fig. 215 Combined *rānak*, the thigh covered with a plate while the lower part is made of chain mail. A knee-cap is attached, early 17th century A.D.

Fig. 216 *Rānak* of one piece extending from the thigh to the toe and fitted with a knee-cap. It is fastened with seven straps.

Fig. 217

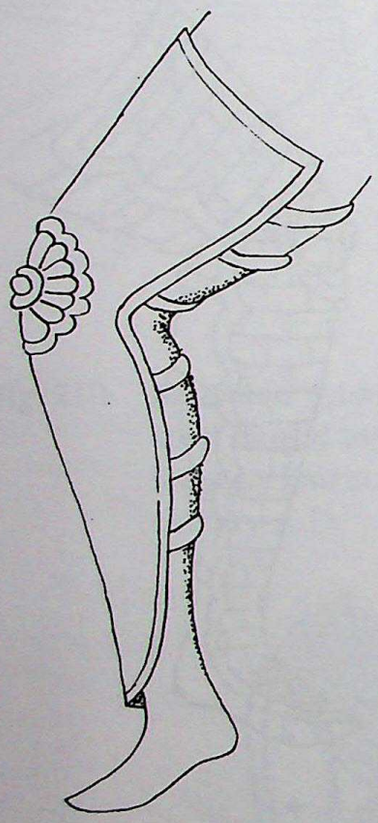

Fig. 218

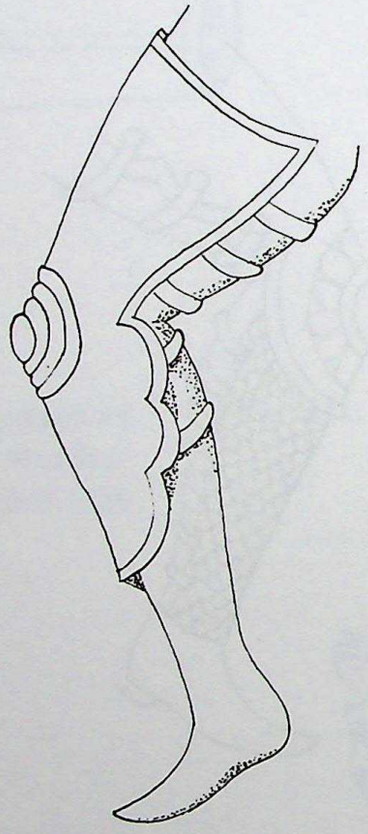

Fig. 219

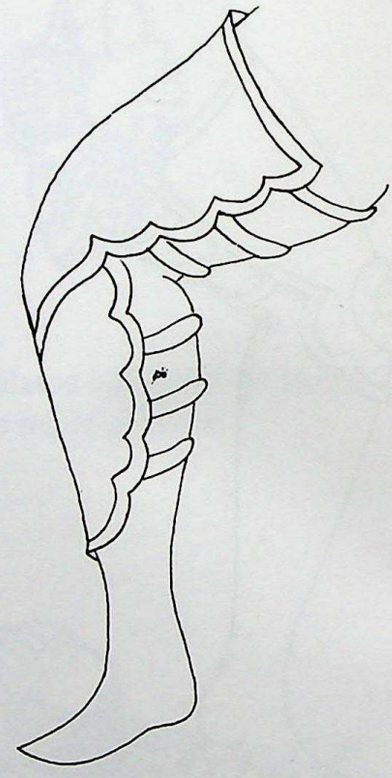

Fig. 217 *Rānak* made of a single piece of metal extending from the thigh to the shin fastened with five straps.

Fig. 218 *Rānak* made of a single piece of metal extending from the thigh to the shin fastened with five straps.

Fig. 219 *Rānak* made of two pieces of overlapping metal; it has no separate knee-cap and is fastened with six leather straps.

Fig. 220

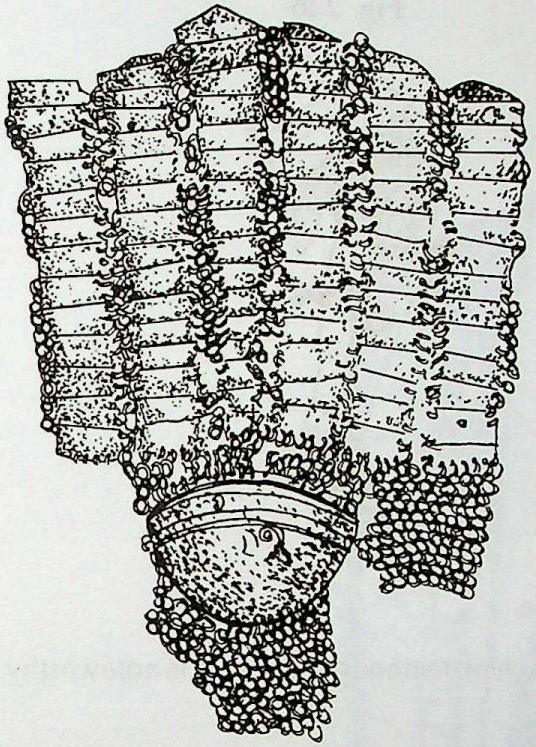

Fig. 221

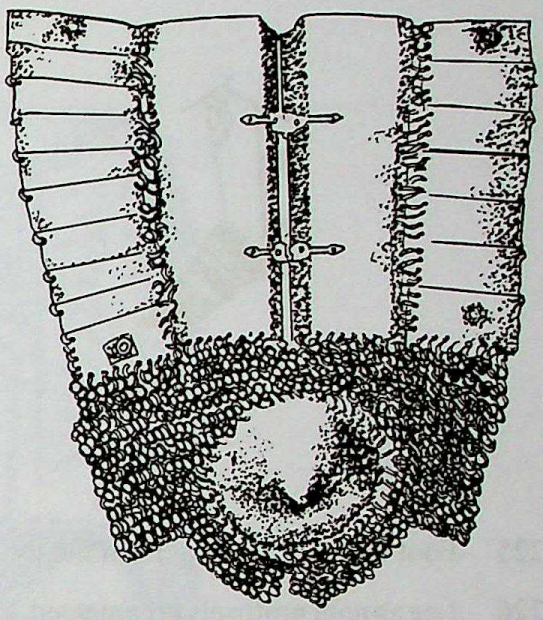

Fig. 220 Indo-Turkish cuisses made of small plates attached with mail. All plates are inlaid and engraved with texts in silver, 16th century A.D. (after G.C. Stone).

Fig. 221 Indo-Turkish cuisses; the oval-shaped knee-cap is attached with mail. The two central rectangular plates are flanked by the small plates on one side and seven on the other, plain, 16th century A.D.

Fig. 222

Fig. 223

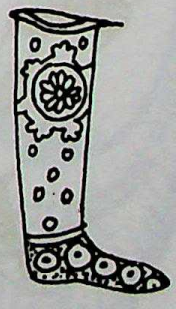

Fig. 224

Fig. 222 Leg armour covering the foot and the foreleg, decorated.

Fig. 223 Leg armour of steel and the foot armour of chain mail, decorated.

Fig. 224 Leg armour of plate and mail, profusely decorated. The leather straps, used for its fastening, are visible.

Fig. 225

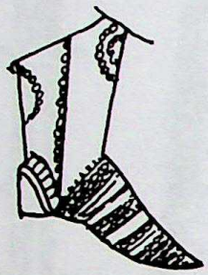

Fig. 226

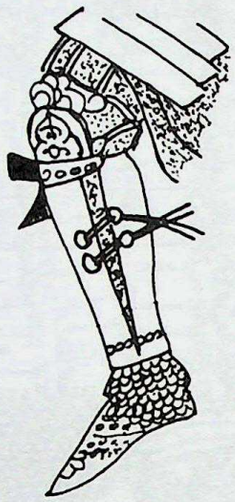

Fig. 225 Foot armour covering from the toe to the ankle.

Fig. 226 Leg armour profusely ornamented, knee-cap attached; method of fastening is noteworthy.

Fig. 227

Fig. 228

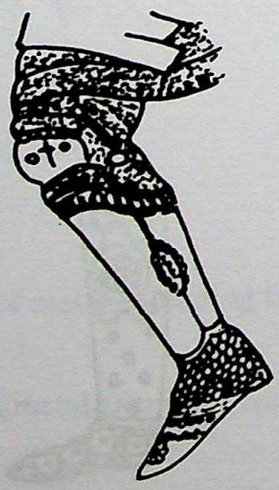

Fig. 229

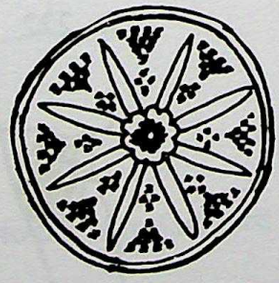

Fig. 227 A soldier wearing leg armour.

Fig. 228 Fully armoured leg; *rāk, rānak* and shoe are visible. Mughal, 17th century A.D.

Fig. 229 Circular shield, *pahrī*. Mughal, *c.* 1600 A.D.

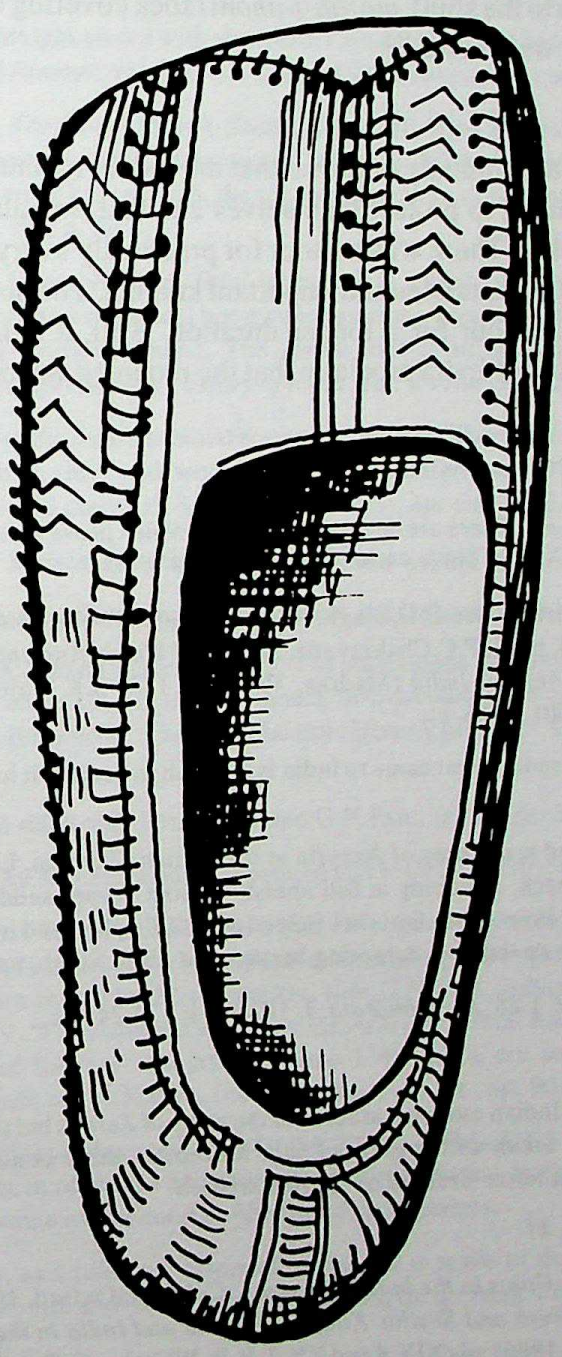

Fig. 230 Armoured shoe.

4. *ARMOUR FOR OTHERS PARTS* (Pls. XCVII to CIV) :

The reputed knights or those who could afford it, used elaborate armour pieces, almost for the protection of every limb. Shoulder-guards,[115] neck protectors,[116] girdles for the waist,[117] *bājūband*[118] (arm-guard), *dastānā*[119] (hand guard), chausson[120] (for the upper part of the leg), knee-cap (for the knee), *rāk*[121] (greave, from thigh to the shin), *mozāh-i-ahanī* (sock covering the foreleg), *rānak* (iron leg-piece or long greave), etc., were used.[122]

CONCLUSION:

The Western scholars have commonly believed that the Indian mounted warriors did not use adequate armour, except the shield, to protect themselves and that was also one of their reasons of defeat. It is not at all convincing. There was armour for practically every limb though, as stated elsewhere, its use was confined to the nobles and important knights. The hot climate of the country also did not permit the use of armour for a longer duration. Still, a number of armour pieces displayed in the various museums of India proclaim that the mounted warriors of India did protect them well.

References

1. *Rigveda*, V. 61-1.; VII. 56.3, etc. There are several references which prove that even if the regular cavalry was not recognised, the individual horses were certainly used in war.
2. For a detailed account of stirrups see S.D.Singh, *Ancient Indian Warfare with Special Reference to the Vedic Period* (Leiden, 1965), p. 63; P.C.Chakravarti, *The Art of War in Ancient India* (Delhi, 1972), p. 33; V.R.Dikshitar, *Warfare in Ancient India* (Madras, 1948), p. 174; B.K.Majumdar, *Military System in Ancient India* (Calcutta, 1960), p. 16, etc.
3. The question as to when the saddle first came to India is difficult to decide. It has been discussed in detail on the previous pages.
4. This is proved by the spirited sculptures of Assyria in the British Museum, London, which depict kings and nobles riding on horseback, galloping at full speed, without proper saddle or any kind of stirrups, shooting arrows and hunting lions. Such feats are indeed no child's play, and indicate the sureness of aim that could be combined with speed on a careering horse, *vide*., S.D.Singh, *op. cit*., p. 63.
5. *Rāmāyaṇa, Ayodhyā Kāṇda*, 1.28; *Mahābhārata*, I. 102.17; I. 124.24, etc.
6. *Mahābhārata*, I, 124.24.
7. Herodotus, indeed, refers to Indian mounted archers in the army of Zerxes but the statement of the 'Father of History' must always be taken with a grain of salt. Moreover, there is nothing to show whether by "mounted archers" he meant horse-archers or chariot-archers.
8. P.C. Chakravarti, *op. cit*., p. 41.
9. V.A.Smith, *Catalogue of the Coins in the Indian Museum, Calcutta* (Oxford, 1906), vol. I, pp. 43.3; Percy Gardner, *The Coins of the Greek and Scythic Kings of Bactria and India in the British Museum; (British Museum Catalogue*, London, 1886), pls XIX.4 and XX.2; R.B. Whitehead, *Catalogue of Coins in the Panjab Museum* (Lahore, 1914), pl. XVI. 82.
10. John Allan, *Catalogue of the Coins of the Gupta Dynasties and of Shashanka, King of Gauda* (London, 1914), pl. XIII. 11-19.

11. A.S. Altekar, *The Coinage of the Gupta Empire* (Banaras, 1957), p. 124, pl. VII, 13; p. 112, pl. XI. 11.

12. John Allan, *op. cit.*, pl. XXII. 1-6: A.S. Altekar, *op. cit.*, pl. XV. 14.

13. P.C.Chakravarti, *op. cit.*, p. 42.

14. Mihājus Sirāj, *Tabaqāt-i-Nāsirī* (Bib. Indica edition, 1897), pp. 119-120.

15. The *talwār* is a straight sword with short hilt, disc pommel and heavy quillons. For details see G.N.Pant, *Indian Arms and Armour*, vol. II (New Delhi, 1980), chapters 1 and 2.

16. Yāhyā Sirhindī, *Tārīkh-i-Mubārak Shāhī*, ed. by Hidayat Hussain (Bib. Indica, 1931). According to Sirhindī the planning of Muizuddīn was as follows, "When the elephants and the cavalry of the Hindus would fall upon one of his sections, the rest would make a simultaneous assault upon them from the other three sides", *op. cit.*, p. 10.

17. *Vide*, Sadruddīn Hasan Nizāmī, *Tajal Maasir*. It is a contemporary account of Muizzuddīn, Aibak and Iltutmish. Verbose and rhetorical but it supplies some invaluable piece of information. It was written in compliance of a royal command. The manuscript is in M. Habib's collection; *Cf.*, M. Habib and K.A.Nizami, *A Comprehensive History of India*, vol. V (*The Delhi Sultanate*) (New Delhi, 1970), p. 1180.

18. *Karawā* was one of the most essential equipments of the Ghurid army. It was a cover made of raw bullock-hide, stuffed on both sides with wool or cotton. This defensive covering protected the infantry like a wall and no weapon could pierce it. See Minhājus Sirāj, *op. cit.*, p. 56.

19. Isāmī, *Futuh-us-Salātīn*, edited by M.Usha (Madras, 1948), pp. 77-78.

20. R.C.Smail, *Crusading Warfare, a Contribution to Medieval Military History*, pp. 80-81.

21. M.Habib and K.A.Nizami, *op. cit.*, p. 139. The anonymous author of *Hududul Alam* says that from Persia and Afghanistan came slaves, *zirah* (armour), *tīr-o-kamāna* (bow and arrow), *jaushan* (coats of mail) and horses, *Cf.*, C.E. Bosworth, "The Early Islamic History of Gaur", *Central Asiatic Journal*, vol. VI (1961), p. 118.

22. This is known as *tūlghamā*. For details see G.N.Pant, *Indian Archery* (New Delhi, 1978), p. 54 *f.n.* 122.

23. *Bābur-nāmā*, tr. by A.S.Beveridge, reprinted (New Delhi, 1970), folio 265 b.

24. A battle-scene painted in the Mughal style, belonging to the 16th century A.D., now in the National Museum, New Delhi, portrays a huge elephant trampling a cavalier. The torn and damaged sword, shield, bow and quiver are seen lying helter-skelter, *vide*, G.N.Pant, *Indian Arms and Armour*, vol. II (New Delhi, 1980), pl. XXXIV. "Crossing of Ganges by the Army of Kublai Khān" (Mughal, dated 1595 A.D.), "Rājā Zorāwar Singh of Bikaner" (Rajasthan, *circa* 1740 A.D.), are some of the paintings depicting horse-archers. For details see G.N.Pant, *Indian Archery, op. cit.*, pp. 90-98.

25. *Bābur-nāmā*, National Museum, New Delhi; *Tārīkh-i-Khāndān-i-Timūriā* (Khuda Bux Library, Patna); *Āin-i-Akbarī* (Prince of Wales Museum, Bombay); *Dāstān-i-Amīr Hamzā* (Metropolitan Museum, New York), etc., are some of the notable illustrated manuscripts.

26. Every horn bow, as a rule, is a composite bow and is made of three substances: (i) horn, for the belly, (ii) wood, for the centre and for the ears, (iii) sinews, for the back. For details see G.N.Pant, *Indian Archery, op. cit.*, p. 117 ff.

27. Egerton, *Indian and Oriental Armour*, reprinted (London, 1968), p. 144, note above No. 746.

28. D. Elmy, "Steel Bows from India", *Journal of the Society of Archer Antiquaries*, vol. 12 (London, 1969), pp. 15-19.

29. G.C.Stone, *A Glossary of the Construction, Decoration and Use of Arms and Armor*, reprinted (New York, 1961), p. 72.

30. Many arrows of the 16th-17th centuries, preserved in the Armoury of Tanjore, Tamilnadu, are inscribed. *Cf.* M.J.Walhouse, "The Old Tanjore Armoury", *Indian Antiquity*, vol. 7, p. 195.

31. *Napthā* arrows were employed by the Arabs and also by Mahmūd Ghaznī. Thses were fire-arrows. For details see G.N.Pant, *Indian Archery, op. cit.*, pp. 35, 52 *f.n.* 88, 180-2.

32. The word *tarkash*, a Persian term, has also been used for all kinds of usual quivers. *cf.*, William Irvine, *The Army of the Indian Moghuls*, reprinted (New Delhi, 1962), p. 100.

33. The illustrated manuscript of the *Bābur-nāmā* in the collection of the National Museum, New Delhi, depicts such *jaibāhs* being carried by the cavaliers. In the *Zafar-nāmā* Sultān Timūr is recorded to have presented quivers with gold belts to his cavaliers. Timūr had peopled his capital, Samarkand, with master craftsmen including bow-and-quiver-makers, of all the nations.

34. G.C.Stone, *op. cit.*, pp. 136-7.

35. W. Irvine, *op. cit.*, p. 100.

36. Abul Fazl, *Āin-i-Akbarī*, 35; tr. H. Blochmann, second edition (Delhi, 1965), p. 116.

37. During the regime of Jahāngīr all the *tarkash-bandana* (quiver-bearers) were ordered to learn shooting with guns, and, therefore, "all the archers became cavalry soldiers", *vide*, G.N.Pant, *Indian Archery, op. cit.*, p. 215.

38. No. 19 of the *Āin-i-Akbarī*, list I. 110.

39. One specimen of *tīr-kash* (18th century A.D.) is displayed in the Arms Gallery, National Museum, New Delhi.

40. G.A.Hansard, *The Book of Archery* (London, 1841), p. 137. For various bracers see G.C.Stone, *op.cit.*, pp. 137-39.

41. Sometimes 'shooting gloves' were also worn. It was of very thin leather, because to secure a good loose it was essential to 'feel' the string.

42. *Cf.*, G.N.Pant, *Indian Archery, op. cit.*, p. 223, figs. 322, 323.

43. It was also called *shast* or *shast-āwéz* (literally 'fastened to thumb'). W. Irvine, *op. cit.* p. 94. These were made of any hard tough material—metals, horn, bone, ivory, tortoise shell and many kinds of stones. G.C.Stone, *op. cit.*, p. 14, fig. 22, has figured 78 archer's rings of various countries including a few used in India.

44. *Bābur-nāmā*, folio 107, tr., *op. cit.*, p. 166 footnote. This *gosha-gīr* was given to Bābur by his Khān Dādā.

45. A.S.Beveridge, *Bābur-nāmā* (tr.), *op. cit.*, appendix 'C', pp. VII-IX.

46. *Bābur-nāmā*, folio 107 b; A.S.Beveridge, *op. cit.*, p. 167. Under the iron helm a soft cap called *dūwulgha būrki* was worn.

47. Only five illustrated copies of the *Bābur-nāmā* exist in the world. They are in the British Museum, London; the Victoria and Albert Museum, London; the Louvre Museum, Paris, and the Oriental Library, Moscow. The fifth copy is in the National Museum, New Delhi which has 183 paintings and contains the names of 48 painters. It was illustrated in the 42nd regnal year (1598 A.D.) of Akbar.

48. Quoted by S.N.Sen, *Military System of the Marāthās* (New Delhi, 1958), p. 70.

49. The curve of the blade of a *kilij* was such that the back of the scabbard at the top had to be opened in order to admit it. The opening was closed by a spring or a hinged plate. For details see G.N.Pant, *Indian Arms and Armour*, vol, II (New Delhi, 1980), pp. 53-4.

50. The gauntlet sword deprives a man of the use of his wrist and would be a very awkward weapon for fencing hence not preferred by the foot-soldiers. It was wielded directly by the strong muscles of the fore and upper arm, and not through the wrist. The total length of the weapon varied from 3-1/2 feet to 4 feet, 2 inches. For details see P.S.Rawson, *The Indian Sword*, reprinted (London, 1961), p. 89, figs. 31-2; G.S.Stone, *op. cit.*, pp. 485-6, fig. 619; G.N.Pant, *op. cit.*, vol. II, pp. 61-65, figs. 96-136.

51. In a miniature painting preserved in the Royal Library at Paris, Shivājī is riding a horse and leading his army to the march. He is wearing a long *pāṭṭā* in his right hand. Most of the foot-soldiers accompanying him are carrying shields and *firangī* swords.

52. The earliest appearance of the swords of *shamshīr* variety is in a Persian manuscript of 1306 A.D. preserved in the Asiatic Society, London, and is called *Jāmi-at-Tawārīkh.*

53. Most of the surviving *shamshīrs* bear the signatures of smiths and a few of them also bear the talismanic signs.

54. For detailed discussion see G.N. Pant, *op. cit.*, vol. II, pp. 72-78, figs. 154-165.

55. G.C.Stone, *op. cit.*, pp. 676-7, figs. 866 and 867; G.N.Pant, *pp. cit.*, vol., II, p. 85.

56. Fedrick Wilkinson, *Swords and Daggers*, third impression (Great Britain, 1972), p. 37.

57. G.N.Pant, *op. cit.*, vol. II, p. 132, pl. XIV.

58. In a miniature painting at the Victoria and Albert Museum, London, Rāo Chhattar Singh (1631-59 A.D.) of Būndī, Rajasthan, is depicted riding a fully armoured horse. He is holding a spear and a *jamadhar* is tied round his waist-belt. *Vide*, W.C.Archer, *Indian Painting in Būndī and Kotāh* (Victoria and Albert Museum, London, 1959), pl. 29. In another painting Akbar, then a Young Prince, is riding a horse and a *jambīa,* whose hilt is studded with jewels, is tied round his waist-band. *Cf.*, Mukundi Lal, *Garhwāl Paintings*, Publication Division (New Delhi, 1968), p. 78, pl. XIX.

59. For detailed description of *jamadhar* see G.N.Pant, *op. cit.*, vol. II, pp. 162-173, figs. 466-530.

60. W. Egerton, *op. cit.*, p. 116, No. 486; G.N.Pant, *op. cit.*, vol. II, pp. 158-162, figs. 417-465.

61. The *kard* and *peshqabz* sometimes look alike but the two are altogether different weapons. While *peshqabz* was a sturdy weapon, *kard* was a fanciful specimen. *Cf.*, G.C.Stone, *op. cit.*, p. 336, fig. 422; G.N.Pant, *op. cit.*, vol. II, pp. 173-4.

62. The personal *khanjars* of Jahāngīr and Nūr Jahān are displayed in the Salar Jung Museum, Hyderabad.

63. On the 23rd March, 1616 A.D., the offerings of Mīr Jamāl-ud-dīn Hussain were laid before Jahāngīr. Among other items there was a jewelled *khanjar* which had been made under his superintendence. On its hilt was a yellow ruby (*yākut-i-zard*, really a topaz), exceedingly clear and bright, in size equal to half a hen's egg. Jahāngīr admits that he had never seen such a beautiful *khanjar* before, *Cf.*, *Tuzuk-i-Jahāngīrī*, tr. by Alexander Rogers, ed. by Henry Beveridge under the title *The Memoirs of Jahangir*, reprinted (Delhi, 1968), vol. I, pp. 317-18.

64. When Prince Khurram (later Shāh Jahān) conquered the Deccan in 1617 A.D., Nūr Jahān conferred on him a dress of honour adorned with pearls, a *sarpéch* (turban ornament), a waist-belt, a sword, a *phūl kaṭāra* and a jewelled *khanjar*, *vide, Tuzuk-i-Jahāngīrī* (tr.), *op. cit.*, vol. I. p. 395.

65. 'Spear' is any long shafted weapon intended solely for thrusting. It is a class name and includes many named as well as nameless weapons.

66. Some of the Indo-Greek, Indo-Bactrian and Indo-Parthian kings have been portrayed as mounted horsemen. On the silver coin of Azes, the king is riding a horseback with a counching spear. For details see G.N.Pant, *Studies in Indian Weapons and Warfare* (New Delhi, 1970), pp. 98-100. These monarchs preferred mounted warfare as they were excellent horsemen. Spears, lances, and javelins were their favourite weapons against the swords, daggers, etc.

67. *Nézā* was a cavalry lance having a small steel head in a long bamboo shaft. It was 10 feet long, held in the middle, raised above the head at full length of arm and hurled. A number of other varieties like *sānk* or *sāng*, *selārah*, *shakti*, *kunta*, *ballam*, etc., were in use. The price of a *nézā*, according to the *Āin-i-Akbarī*, was between 1-3/4 rupee and 2 *muhars*.

68. G.C.Stone, *op. cit.*, p. 320, fig. 402.

69. *Jarid-bāzī* was the "spear play". It was played by two men on horseback with a spear, twelve feet long. They rode after each other, one throwing the *jarid*, or spear shaft, with full force, with the object of hitting and unhorsing his opponent, while the latter, by dexterous agility, endeavoured not only to evade the blow, but to seize the weapon in the air and attack in turn. *Cf.*, W. Egerton, *op. cit.*, p. 150.

70. The Marāthās relied more on spear and lance than bows or matchlock. The Sikh cavaliers also used light spears.

71. This not only kept the lance upright, but prevented it from getting bent as it would if allowed to lean against any solid object.

72. G.C.Stone, *op. cit.*, p. 408, fig. 513. Some lances were made entirely of steel, a number of small pieces being locked together to make a light, stiff, strong shaft.

73. W.Egerton, *op. cit.*, p. 557; G.C.Stone, *op. cit.*, p. 535, fig. 685.

74. Quoted by G.N.Pant, *Studies in Indian Weapons and Warfare* (New Delhi, 1970), p. 185.

75. Abul Fazl states that the price of a *gurz* ranged from 1/4 rupee to 5 *muhars*. Shāh Jåhāh had bestowed one mace of gold on Hājī Bég. We have example of *gurz* having doube heads, one over the other.

76. J.N.Sarkar, *The Art of War in Medieval India* (New Delhi, 1984), p. 121.

77. The axe was equally popular with the Marāthā horsemen. At the time of Shivājī's death there were 3000 war-axes in his armoury. We also came across with *tabar* having two blades, one on each side.

78. J. N. Sarkar, *op. cit.*, p. 121.

79. To increase the effectiveness of burning missiles and make the flame persistent, various materials and devices like vegetable oils, petroleum, *napthā*, bituminous products, etc., were used during medieval period. The real fire-arms were known in Gujarat but in North India Bābur seems to haye introduced it.

80. The fire-arms used by Bābur mainly consisted of matchlocks or *bandūk torédār*. It comprised a long barrel of wrought iron attached to a wooden butt and wrapped with metal bands. It was fired by a *fatīlā* (slow lighted match). The *fatīlās* were prepared from the hanging roots of the *pīpal* tree or cotton threads.

81. *Āin-i-Akbarī*, *Āin.* 36, 37.

82. J.N.Sarkar, *op. cit.*, p. 139.

83. Mahārājā Ranjit Singh had organised his artillery into *topkhānā-i-jinsī* (mixed batteries), *aspī* (horse-driven), *gavai* (bullocks-driven), *phīlī* (elephants-driven) and *shutarī* (camels driven). There was a *topkhānā-i-khās* consisting of light guns on horseback which was exclusively for the Mahārājā. These guns were made in the foundry set up at Lahore and some of them cost as much as Rs. 1000 those days.

84. Akbar was keenly interested in and gave serious attention to artillery. A number of *āins* in the *Āin-i-Akbarī* have been devoted to matchlock and its variants. Imperial *kārkhānās* were developed and artists were encouraged to devise new designs.

85. G.N.Pant, *Studies in Indian Weapons and Warfare, op. cit.*, pp. 199-206.

86. The helmet of Duryodhana, according to the *Mahābhārata* (*Bhīshma Parva*, ch. 64) was a formidable one and Jayadratha, one of the knights, wore a helmet of gold (*Droṇa Parva*, 43.17). Kautilya mentions *shirastrāṇa* (helmet) together with proctective armour for other parts of the body (*Arthashāstra*, Book II, ch. 18).

87. In the *Tārīkh-i-Tāhirī* we are told that on the first invasion of Mughals in India the women miscarried at the very sight of the Mughals with their terrific helmets, *vide*, Elliot and Dowson, *History of India as Told by its Own Historians*, vol. I, p. 533.

88. It was an ornamental piece. Being completely encased, the knights could not always be recognised so some wore a crest at the top of their helmets, *vide*, Elliot and Dowson, *History of India as Told by its Own Historians*, vol. I, p. 533.

88. It was an ornamental piece. Being completely encased, the knights could not always be recognised so some wore a crest at the top of their helmets by which they could be distinguished.

89. It is typical of Indian and Persian helmets. The crest may or may not be found but the spike is the integral part of an Indian helmet.

90. The skull was mostly made of one piece but sometimes two or more pieces of metal were hinged together with nail. Ribbed, grooved, inscribed and damascened skulls are in plenty. Verses from the Holy *Qurān* were very common.

91. It is also called *purdāh* since it was made of mail like a transparent veil.

92. The helmet once used by the heavy cavalry of Tīpū Sultān is displayed in the Tower of Armouries, London. There is a central boss having ten vertical gores for the crown, each gore having a medial-rib. Attached to it are six smaller plates hinged by mail for the protection of ears, sides and neck. The nasal has a large crescent-shaped terminal to protect the lower half of the wearer's face.

93. For details see G.N.Pant, *Indian Arms and Armour*, vol. III (New Delhi, 1963), pp. 39-70, figs. 104-236.

94. It was 'egg-like' and was not pointed. It was worn over a coif and was held in place by straps which went under the chin.

95. It was originally a Turkish helmet—tall and peaked with a nasal-guard and large cheek-pieces. Sometimes these were also made of raw-hide covered with velvet and mounted with copper gilt. This found special favour with horse-riders.

96. Made of single piece of steel surmounted with a tiny crest over a circular disc. It had no provision for nasal.

97. It had a hemispherical bowl, a leaf-shaped crest, two plume-holders, a sliding nasal and a long camail of mail. Its another variant was *khud chilmandār* which had still longer camail (almost like a *chilman* or curtain) and a broad nasal.

98. Either made entirely of mail or of mail and small plates joined together.

99. This was composed of padded chain mail strengthened by wedge-shaped plaque and surmounted with a small button. There were two big holes for the eyes and a triangular flap near the mouth which could be uplifted, otherwise the entire face was completely covered.

100. For details of all these helmets see G.N.Pant, *op. cit.*, vol. III, ch. IV.

101. It was a small shield, very light and held in the left hand while fighting. It had a small handle in the centre on the inner side.

102. According to the *Āin-i-Akbarī* this was a very big shield, large enough to cover a horseman completely, as against it was *chirwā*, a small shield, used by the gladiators (*shamshīr-bāz*).

103. It was made of wood and covered with leather. The large round *junās* wer hung from a guige by Muslim cavalry.

104. It was formed from a tightly wound spiral of cane bound with silk threads. It was specially favoured by the Mughal horsemen.

105. It was a small shield of cane or bamboo, light, reasonably strong and bound with cotton or silk threads to make beautiful patterns. It is illustrated in the *Āin-i-Akbarī*.

106. It was of steel or hide, 17 to 24 inches in diameter. If of steel, these were very highly ornamented with patterns in gold damascening; if of hide, they had on them silver or gold bosses, crescents or stars.

107. For discussion of various types of shields please see G.N.Pant, *Indian Shield* (New Delhi, 1983).

108. In one painting (Guler, 1810 A.D.) Guru Gobind Singh is riding a caparisoned horse and his shield is being carried by an attendant on foot.

109. It was a long wadded coat, opened in the front and reached below the knee.

110. It consisted of four steel plates: a breast-plate, a back-plate and two side plates. All the pieces were connected together with leather straps. The two worn on the breast and the back were comparatively long while the side plates were cut away at the top so that they could fit inside the armpit. *Cf.*, *Āin-i-Akbarī*, I. 112; pl. XIII, fig. No. 49 of Blochmann; Egerton, *op. cit.*, pl. IX and on p. 744.

111. It was like a half-sleeved shirt, opening on the front with the help of straps.

112. It was long-sleeved, quilted and covered a greater part of the body.

113. It was a typical Indo-Persian coat of mail. Some had short sleeves while others had long ones. Coats made of double mail or those fitted with small plates are also found. Its another variant was *zirah kurtā*.

114. For details see G.N.Pant, *op. cit.*, vol. III, ch. VI.

115. Normally shoulder was covered by coat of mail but sometimes separate detachable shoulder-guards were also used.

116. Neck was generally protected by the camail of the helmet but sometimes separate gorgets were also used.

117. Its one variant was *kamar-band*, generally of leather and rarely of metal, which protected the abdomen, groin and waist.

118. It consisted of a curved plate which covered the inner side of the hand from the knuckle to the elbow. A short curved plate (covering the wrist) was attached to it. Innumerable varieties of *bājūbands* are displayed in the museums of India having arms collection.

119. It was shorter than *bājūband* and covered the knuckle, the wrist and the upper arm. *Dastānās* made of metal, leather, mail, brigandine, etc., are available.

120. It was made of small plates attached with mail. Sometimes knee-cap was also a part of it.

121. It was a leg-guard, made of two separate plates, to look like a long boot.

122. For details see G.N.Pant, *op. cit.*, vol. III, ch. VII.

APPENDIX I

KAUṬILYA ON ELEPHANTS

(ARTHAŚĀSTRA, BOOK II, CHAPTERS XXXI - XXXII)

THE SUPERINTENDENT OF ELEPHANTS

The Superintendent of Elephants shall take proper steps to protect elephant forests and supervise the operations with regard to the standing or lying in stables of elephants: male, female, or young, when they are tired after training, and examine the proportional quantity of rations and grass, the extent of training given to them, their accoutrements and ornaments, as well as the work of elephant doctors, of trainers of elephants in warlike feats, and of grooms, such as drivers, binders, and others.

There shall be constructed an elephant stable twice as broad and twice as high as the length (*āyāma*) of an elephant, with separate apartments for female elephants, with projected entrance (*sapragrīvām*), with posts called *kumarī*, and with its door facing either east or the north.

The space in front of the smooth posts (to which elephants are tied) shall form a square, one side of which is equal to the length of an elephant, and shall be paved with smooth wooden planks and provided with holes for the removal of urine and dung.

The space where an elephant lies down shall be as broad as the length of an elephant, and provided with a platform raised to half the height of an elephant for leaning on.

Elephants serviceable in war or riding shall be kept inside the fort; and those that are still being tamed or are of bad temper shall be kept outside.

The first and the seventh of the eight divisions of the day are the bathing times of elephants; the time subsequent to those two periods is for their food; forenoon is the time for their exercise; afternoon is the time for drink; two (out of eight) parts of the night are the time for sleep; one-third of the night is spent in taking wakeful rest. The summer is the season to capture elephants. That which is 20 years old shall be captured. Young elephants (*bikkā*), infatuated elephants (*mugdhā*), elephants without tusks, diseased elephants, elephants which suckle their young ones (*dhenukā*) and female elephants (*hastinī*) shall not be captured.

(That which is) seven *aratins* in height, nine *aratins* in length, ten *aratins* in circumference, and is (as can be inferrred from such measurement) 40 years old, is the best. That which is 30

years old is of middle class; and that which is 25 years old is of the lowest class.

The diet (for the last two classes) shall be lessened by one-quarter, according to the class. The rations for an elephant (of seven *aratins* in height) shall be one *droṇa* of rice, half an *āḍhaka* of oil, 3 *pṛasthas* of ghee, 10 *palas* of salt, 50 *palas* of flesh, one *āḍhaka* of broth (*rasa*) or twice the quantity (*i.e*, two *āḍhakas*) of curd; in order to render the dish tasteful, 10 *palas* of sugar (*kshāra*), one *āḍhaka* of liquor, or twice the quantity of milk (*payah*); one *pṛastha* of oil for smearing over the body, one eighth *pṛastha* (of the same) for the head and for keeping a light in the stables; two *bhāras* of meadow grass, 2-1/4 *bhāras* of ordinary grass (*śashpa*) and 2-1/2 *bhāras* of dry grass and any quantity of stalks of various pulses (*kaḍaṅkara*). An elephant in rut (*atyarāla*) and of 8 *aratins* in height shall have equal rations with that of 7 *aratins* in height. The rest of 6 or 5 *aratins* in height shall be provided with rations proportional to their size. A young elephant (*bikkā*) captured for the mere purpose of sporting with it shall be fed with milk and meadow grass.

That which is blood-red (*samjātalōhita*), that which is fleshed, that which has its sides evenly grown (*samaliptapaksha*), that which has its girths full of equal (*samakaksyā*), that whose flesh is evenly spread, that which is of even surface on its back (*samatalpatalā*) and that which is of uneven surface (*jātadrōṇikā*) are the several kinds of physical splendour of elephants.

Suitably to the seasons as well as to their physical splendour, elephants of sharp or slow sense (*bhadra* and *manda*) as well as elephants possessed of the characteristics of other beasts shall be trained and taught suitable work.

THE TRAINING OF ELEPHANTS

Elephants are classified into four kinds in accordance with the training they are given: that which is tameable (*damya*), that which is trained for war (*sānnāhya*), that which is trained for riding (*aupavāhya*), and rogue elephants (*vyāla*).

Those which are tameable fall under five groups: that which suffers a man to sit on its withers (*skandhagata*), that which allows itself to be tethered to a post (*stambhagata*), that which can be taken to water (*vārigata*), that which lies in pits (*apapātagata*), and that which is attached to its herd (*yūtthagata*).

All these elephants shall be treated with as much care as a young elephant (*bikkā*).

Military training is of seven kinds: drill (*upasthāna*), turning (*samvartana*), advancing (*samyāna*), trampling down and killing (*vadhāvadha*), fighting with other elephants (*hastiyuddha*), assailing forts and cities (*nāgarāyaṇa*) and warfare (*yuddha*).

Binding the elephants with girths (*kakshyākarma*), putting on collars (*graiveyakakarma*) and making them work in company with trained herds (*yūthakarma*) are the first steps (*upavichāra*) of the above training.

Elephants trained for riding fall under eight groups: that which is taught to follow wild elephants with the fore and hind limbs raised and with the back a little lowered, which suffers a man to mount over it when in company with another elephant (*kuñjaraupavāhya*), that which suffers

riding when led by a war-like elephant (*sānnāhyopavāhya*), that which is taught trotting (*dhoraṇa*), that which is taught various kinds of movements (*adhānagatika*), that which can be made to move by using a staff (*yashtyupavāhya*), that which can be made to move by using an iron hook (*trotropavāhya*), that which can be made to move without whips (*śuddhopavāhya*), and that which is of help in hunting.

Autumnal work (*śāradakarma*), mean or rough work (*hīnakarma*), and training to respond to signals are the first steps for the above training.

Rogue elephants can be trained only in one way. The only means to keep them under control is punishment. It has a suspicious aversion to work, is obstinate, of perverse nature, unsteady, wilful, or of infatuated temper under the influence of rut.

Rogue elephants whose training proves as failure may be purely roguish (*śuddha*), clever in roguery (*suvraia*), perverse (*vishama*) or possessed of all kinds of vice.

The form of fetters and other necessary means to keep them under control shall be ascertained from the doctor of elephants. Tether posts (*ālāna*), collars, girths, bridles, leg chains, frontal fetters are the several kinds of binding instruments. A hook, a bamboo staff and machines (*yantra*) are instruments. Necklaces such as *vaijayantī* and *kshurapramālā*, and litters and housings are the ornaments of elephants. Mail armour (*varma*), clubs (*totra*), arrow bags, and machines are war accoutrements.

Elephant doctors, trainers, expert riders, as well as those who groom them, those who tether them to posts, those who sweep elephant stables, and those who keep watch in the stables at night, are some of the persons that have to attend to the needs of elephants.

Elephant doctors, watchmen, sweepers, cooks and others shall receive (from the storehouse) one *pṛastha* of cooked rice, a handful of oil, and two *palas* of sugar and of salt. Excepting the doctors, others shall also receive 10 *palas* of flesh.

Elephant doctors shall apply necessary medicines to elephants which, while making a journey, happen to suffer from disease, overwork, rut or old age.

Accumulation of dirt in stables, failure to supply grass, causing an elephant to lie down on hard and unprepared ground, striking on vital parts of its body, permission to a stranger to ride over it, untimely riding, leading it to water through impassable places, and allowing it to enter into thick forests are offences punishable with fines. Such fines shall be deducted from the rations and wages due to the offenders.

During the period of *Chāturmāsya* (the months of July, August, September and October) and at the time when two seasons meet, waving of lights shall be performed thrice. Also on new moon and full moon days, commanders shall perform sacrifices to *Bhūtas* for the safety of elephants.

Leaving as much as is equal to twice the circumference of the tusk near its root, the rest of the tusks shall be cut off once 2-1/2 years in the case of elephants born in countries irrigated by rivers (*nadija*), and once in 5 years in the case of mountain elephants.

APPENDIX II

KAUṬILYA ON HORSES

(ARTHAŚĀSTRA, BOOK II, CHAPTER XXX)

THE SUPERINTENDENT OF HORSES

The Superintendent of Horses shall register the breed, age, colour, marks, group of classes, and the native place of horses, and classify as (1) those that are kept in sales-house for sale (*paṇyāgārikam*), (2) those that are recently purchased (*krayopāgatam*), (3) those that have been captured in wars (*āhavalabdham*), (4) those that are of local breed (*ājātam*), (5) those that are sent thither for help (*sāhāyyakāgatam*), (6) those that are mortgaged (*paṇasthitam*), and (7) those that are temporarily kept in stables (*yāvatkālikam*). He shall make a report (to the king) of such animals as are inauspicious, crippled or diseased. Every horseman shall know how to make an economic use of whatever he has received from the king's treasury and storehouse.

The Superintendent shall have a stable constructed as spacious as required by a number of horses to be kept therein, twice as broad as the length of a horse, with four doors facing the four quarters, with its central floor suited for the rolling of horses, with projected front provided with wooden seats at the entrance, and containing monkeys, peacocks, red spotted deer (*pṛshta*), mongoose, partridges (*chakora*), parrots, and *maina* birds (*śārika*); the room for every horse shall be four times as broad or long as the length of a horse, with its central floor paved with smoothened wooden planks, with separate compartments for fodder (*khādanakoshṭhakam*), with passages for the removal of urine and dung, and with a door facing either the north or the east. The distinction of quarters (*digvibhāga*) may be made as a matter of fact or relatively to the situation of the building.

Steeds, stallions and colts shall be separately kept. A steed that has just given birth to a colt shall be provided for the first three days with a drink of one *prastha* of clarified butter; afterwards it shall be fed with a *prastha* of flour (*saktu*) and made to drink oil mixed with medicine for ten nights; after that time it shall have cooked grains, meadow grass, and other things suited to the season of the day.

A colt, ten days old, shall be given a *kuḍumba* of flour mixed with one-fourth *kuḍumba* of clarified butter, and one *prastha* of milk till it becomes six months old; then the above rations shall be increased half as much during each succeeding month, with the addition of one *prastha* of barley till it becomes three years old; at the age of four or five it attains its full development and becomes serviceable.

The face (*mukha*) of the best horse measures 32 *aṅgulas*; its length is 5 times its face; its shank is 20 *aṅgulas*; and its height is 4 times its shank. Horses of medium and lower sizes fall short of the above measurement by two and three *aṅgulas* respectively. The circumference (*pariṇāha*) of the best horse measures 100 *aṅgulas*, and horses of medium and lower sizes fall short of the above measurement by five parts (*pañchabhāgāvaram*).

For the best horse (the diet shall be) two *droṇas* of any one of the grains, rice (*śāli, vrihi*), barley, panic seeds (*priyaṅgu*) soaked or cooked, cooked *mudga* (*Phraseolus Mungo*) or *māsha* (*Phraseolus Radiatus*); one *prastha* of oil, 5 *palas* of salt, 50 *palas* of flesh, one *āḍhaka* of broth (*rasa*) or two *prasthas* of milk. The same quantity of drink shall be specially given to those horses which are tired of long journey or of carrying loads.

One *prastha* of oil for giving enema (*anuvāsana*), one *kuḍumba* of oil for rubbing over the nose, 1,000 *palas* of meadow grass, twice as much of ordinary grass (*tṛṇa*); and hay stalk or grass shall be spread over an area of 6 *aratins*. The same quantity of rations less by one-quarter for horses of medium and lower size. A draught horse or stallion of medium size shall be given the same quantity as the best horse; and similar horses of lower size shall receive the same quantity as a horse of medium size. Steeds and *pāraśamase* shall have one quarter less of rations. Half of the rations given to steeds shall be given to colts. Thus is the distribution of ration dealt with. Those who cook the food of horses, grooms and veterinary surgeons shall have a share in the rations (*pratisvādabhajah*).

Stallions which are incapacitated owing to old age, disease or hardships of war, and, being, therefore, rendered unfit for use in war, live only to consume food, shall, in the interests of citizens and country people, be allowed to cross steeds.

The breed of Kambhoja, Sindhu, Araṭṭa, and Vanāyu countries are the best; those of Bāhlīka, Pāpeya, Sauvīra, and Taitala are of middle quality; and the rest ordinary (*avarāh*). These three sorts may be trained either for war or for riding, according as they are furious (*ṭīkshṇa*), mild (*bhadra*), or stupid or slow (*manda*).

The regular training of a horse is its preparation for war (*sānnāhyam karma*). Circular movement (*valgaṇa*), slow movemnt (*nichairgata*), jumping (*laṅghana*), gallop (*dhoraṇa*), and response to signals (*nāroshṭra*) are the several forms of riding (*aupavāhya*).

Aupaveṇuka, vardhmānaka, yamaka, āliḍhapluta, vṛthāṭṭa and *ṭravachāli* are the varieties of circular movements with the head and ear kept erect are called slow movements. These are performed in sixteen ways;

Prakīrṇaka, prakirṇottara, nishaṇṇa, pārśvānuvṛtta, urmimārga, śarabhakriḍita, śarabhapluta, tritāla, bāhyānuvṛtta, pañchapāṇi, simhāyata, svādhūta, klishṭa, ślāghita, bṛmita, pushpābhikiṛna.

Jumping like a monkey (*kapipluta*), jumping like a frog (*bhekapluta*), leaping like a cuckoo (*kokilasamchāri*), dashing with its breast almost touching the ground (*urasya*), and leaping like a crane (*bakasamchāri*) are the several forms of jumping.

Flying like a vulture (*kāṅka*), dashing like a water duck (*vārikāṅka*), running like a peacock (*mayūra*), half the speed of a peacock (*ardhamayūra*), dashing like a mongoose (*nākula*), half the

speed of a mongoose (*ardhanākula*), running like a hog (*vārāha*), and half the speed of a hog (*ardhavārāha*) are several forms of gallop. Movement following a signal is termed *nāroshṭra*. Six, nine, and twelve *yojanas* (a day) are the distances (to be traversed) by carriage horses. Five, eight, and ten *yojanas* are the distances (to be traversed) by riding horses (*pṛshṭhavāhya*).

Trotting according to its strength (*vikrama*), trotting with good breathing (*bhadrāśvāsa*), and pacing with a load on its back are the three kinds of trot. Trotting according to strength (*vikrama*), trot combined with circular movement (*valgita*), ordinary trot (*upakaṇṭha*), middlemost speed (*upajave*), and ordinary speed are also the several kinds of trot (*dhārā*).

Qualified teachers shall give instructions as to the manufacture of proper ropes with which to tether the horses. Charioteers shall see to the manufacture of necessary war accoutrements of horses. Veterinary surgeons shall apply requisite remedies against undue growth or diminution in the body of horses, and also change the diet of horses according to changes in seasons.

Those who move the horses (*sūtragrāhaka*), those whose business is to tether them in stables, those who supply meadow grass, those who cook the grains for the horses, those who keep watch in the stables, those who groom them and those who apply remedies against poison shall satisfactorily discharge their specified duties and shall, in default of it, forfeit their daily wages.

Those who take out for the purpose of riding such horses as are kept inside (the stables) either for the purpose of waving lights (*nirānjana*) or for medical treatment shall be fined twelve *paṇas*. When owing to defects in medicine or carelessness in the treatment, the disease (from which a horse is suffering) become intense, a fine of twice the cost of the treatment shall be imposed; and when, owing to defects in medicine, or not administering it, the result becomes quite the reverse, a fine equal to the value of the animal (*pathramūlya*) shall be imposed.

The same rule shall apply to the treatment of cows, buffaloes, goats, and sheep.

Horses shall be washed, bedaubed with sandal powder, and garlanded twice a day. On new moon days sacrifice to *Bhūtas*, and on full moon days the chanting of auspicious hymns shall be performed. Not only on the ninth day of the month of *Aśvayuja*, but also both at the commencement and close of journeys (*yātrā*) as well as in the time of disease shall a priest wave lights invoking blessings on the horses.

APPENDIX III

ANIMAL ARMOUR FROM TAXILA EXCAVATIONS

(FROM SIR JOHN MARSHALL, TAXILA, VOL. II, REPRINTED (VARANASI, 1975), PP. 549-551)

Eighteen armour plates of iron much corroded and adhering together, along with the three links of an iron chain have been found. Size about 10 x 8.5 x.08 inch thick from Sirkap.[1] The plates are curved to fit the body and are of different sizes and patterns; some of their edges are straight, others curvilinear, while some are provided with hings or pierced with small holes for lashing. The plates are so corroded that there is no possibility of separating them, but enough is visible to show that each was made up of several strips of metal, probably hammered together. It is not possible to determine for certain if they were riveted. Rectangular armour plates, either of iron or lacquered leather, are figured on the skirts of soldiers in certain Gāndhāra reliefs[2] but the size and weight of these plates from Sirkap suggest that they served as armour for horses or even for camels[3] or elephants, rather than for men. Horses and riders clad in mail or plate armour were, from early times, a feature of the Persian, Seleucid, Parthian and Sarmatian armies. A horseman with an armoured apron protecting his legs is figured on coins of the Saka Satrap Kharahostes.[4] About the second century A.D., the idea was also copied by the Romans, to whom this class of heavy cavalry was known as the *cataphracti*.[5] The bardings of elephants were called *loricati*.[6]

One helmet (No. 92) has been unearthed. It has cheeks on one side, attached seemingly by pivot, enabling it to be raised or lowered.[7] The other side of the helmet is missing. Length 9.5 inches, width 7 inches, height 6 inches. The crown is of one piece, beaten out like an oval bowl and afterwards deepened by means of horizontal bands hammered on to it. It is large enough to admit a thick padded cap underneath, even on a high head. On the summit is a boss intended for the attachment of ring, spike or crest.

Three bosses of shield (*umbo*)[8] have been found. No. 93 has a single-looped cross-piece riveted on at the back for attaching the handle. Its diameter is 1.87 inches and has been discoverd from Block K, stratum II. The second boss (No. 94) is similar, with three-looped cross-pieces at the back; Diam. 2.87 inches, Block D, stratum II. The third boss (No. 95) is similar to No. 94. Diam 6.25 in., Block C, stratum III.

BITS AND CHEEK-BARS OF HORSE BRIDLES

Ancient horse bits were generally of three kinds, *viz.*: (a) the simple plain or jointed snaffle-bit; (b) the protected snaffle, with a ring or cheek-bar at each side to prevent the rein slipping into

the mouth; (c) the curb-bit with a curb-chain or strap fastened to the upper ends of the cheek-bars and passing under the horse's lower jaw, while the reins are attached to the lower ends of the cheek-bars.[9] The bits found at Taxila are of (a) and (b) types only. They date from the Ist century A.D. Arrian says that in the time of Alexander, the Great, the Indians did not curb the horses with bits like those in use among the Greeks and Kelts, but they fitted round the horse's mouth a circular piece of ox-hide studded with iron or brass pricks pointing inwards but not very sharp; and within the horse's mouth they put an iron prong like a skewer, to which the reins were attached so that when the rider pulled the mouth, compelling it to obey its reins.[10] That the Greeks introduced the snaffle-bit into India is corroborated by the fact that the Sanskrit word for 'bit' (*khalina*) is borrowed from a Greek word. The spiked bit is still all too familar in the North-west, but no examples of it have been found at Taxila. Cheek-bars of horn and bone have also been found at Taxila.[11]

Three snaffle-bits have been excavated. The snaffle-bit (No. 96),[12] jointed in the middle, with cheek-rings is made in one piece with each section of the bar. The bar is plain, length 8.62 inches. It has been found from Block C, stratum II, Sirkap. The second (No. 97)[13] is similar, length 7.5 inches, Block K, stratum II, Sirkap. The third (No. 98)[14] is also similar, length 7.87 inches, Block J, stratum II, Sirkap.

Three cheek-bars have been traced. No. 99 is an S-shaped cheek-bar of horse-bridle with two holes for rein-strap.[15] The cheek-bar was attached to the bit.[16] Length 5.5 inches, trench A 627, Sirkap. Two cheek-bars (Nos. 100 a and b) similar to No. 99 but slightly curved instead of being S-shaped, length 6.75 in. and 7.25 in. respectively, Block E, stratum III, Sirkap.

Cheek-bars of horn and bone have been found only among the Parthian remains in Sirkap. Some are made of horn, others of bone usually curved in imitation of horn, and others of iron. The horn and bone specimens are invariably pierced with two holes in which an iron staple was fixed for the bit-rings to pass through. No. 115 is a cheek-bar of horn with two tines. The bar is pierced with two holes at 2.25 and 3.5 inches above the base. It is decorated with three incised parallel bands near base, Block F, stratum III, Sirkap. No. 116 is similar but of bone curved in imitation of horn. Length 4 inches, Block C, stratum II, Sirkap. No. 117 is similar to No. 116 but longer. Decorated with incised parallel lines and chevron near base. Length 6.37 inches, Block K, stratum II, Sirkap. No. 118 is similar to No. 116 but not curved. Decorated with two bands of incised lines, round upper half, length 3.62 inches, 2 feet below surface, Sirkap.

ELEPHANT-GOADS

Somewhat similar implements to those described below are designated 'fire hooks' by Flinders Petrie and said to have been used in Egypt for raking to charcoal in the braziers. There is no reason, however, to suppose that the following implements were other than the familar *ankusha* figured so often in early Indian sculptures. It is noteworthy that precisely the same type of elephant-goad was used in North Africa.

Two elephant-goads have been dug out. The first (No. 101) has a sharp point at one end and curved hook at side. Length 25.5 inches, Block C, stratum II, Sirkap. The second (No. 102) is similar, length 5.5 in., Block C, stratum III, Sirkap.

References

1. These have been unearthed from Block F, stratum II.
2. *Cf.*, Foucher, *Art Gréco-bouddhique du Gandhara,* p. 405, figs. 202, 204.
3. The Parthian camelry, which was so heavily armed, may have been copied from the Roman *dromedarii.* The idea of the *cataphract* also spread eastward to China as early, probably, as the first century B.C. *Cf.,* Laufer, *Chinese Clay Figures,* p. 217.
4. *British Museum Cataloque of Greek and Scythic Coins of Bactria and India,* pl. XXIII.6.
5. *Cf.*, Xenophon, *Anab,* 1, 8. 6-7.
6. In the excavation have been found two groups of plate armour intended for the arms. They consisted of 24 and 18 pieces respectively, of varying sizes and shapes. They are quite heavy.
7. No. 159 is helmet-shaped door-boss, with long boss-headed nail through centre. It is of fifth century A.D.
8. *Cf.* Sir John Marshall, *Taxila,* 'Silverware' chapter 29, No. 22 and pl. 187; 'Copper and Bronze', ch. 28, Nos. 388, 369 and pl. 177.
9. Flinders Petrie, *Tools and Weapons,* pp. 55, 56 and pls. LXX, LXXI; *Encylopaedia Britanica,* s.v. 'Saddlery'.
10. *Cf.*, Arrian, *Indika,* 16; Strabo, XV, 66, says, "Instead of bridles they use muzzles, which differ little from halters and the lips are perforated with spikes.
11. Sir John Marshall, *Taxila,* ch. 32, Nos. 115-17.
12. *Ibid.*, pl., 165, No. 96, 205 c.
13. *Ibid.*, pl. 165, No. 97.
14. *Ibid.*, pl. 165, No. 98.
15. *Ibid.*, pl. 205 b. It shows a horn cheek-bar and bit from Central Asia.
16. For S-shaped bars *Cf.*, Flinders Petrie, *op. cit.*, p. 56.

APPENDIX IV

ELEPHANT-GOAD

Strictly it was not a weapon of war but has been very closely associated with elephant corps as a useful aid to goad the elephant. It was called *aṅkusha* (literally 'to control'). It consists of a short shaft with a leaf-shaped pointed blade on one side and curved prong on the other, both of metal. In the *Mahābhārata* the driver (*mahāut*) has been termed *hastisādinah.*[1] Megasthenese records that during his time three fighting men rode the elephant. "There is also a fourth man who carries in his hand the goad wherewith he guides the animal, much in the same way as the pilot and captain of a ship directs its course with the helm."[2] (Pls. LXXXII, LXXXIII)

In the sculptures of Bharhut and Sānchī[3] we find different types of goads, the shorter portions of which are abruptly curved. There are beautiful representations of the elephant-goads in the frescoes of Ajantā.[4] The *Mānasollāsa*[5] also refers to the driver carrying elephant-goad. The *Agnipurāṇa*[6] suggests that every war-elephant should carry two hook-bearers together with two archers and two swordsmen. There the driver is called *aṅkushadhara*[7] because he always carried an *aṅkusha* or hook. Māgha[8] describes that the *aṅkusha* had peacook feathers attached to it. According to Shukrāchārya[9] the hook had one point for driving on and another for drawing back.

Kauṭilya[10] describes *aṅkusha* and *toltra* as instruments to direct the elephants. These are mentioned by Bāṇa[11] and Hiuen Tsiang[12] also.

These have been depicted on the coins as well. On the reverse of the coin of Gomitra II (*c.* 200 B.C.) of Mathura, three elephant-goads have been portrayed.[13] Similar illustrations have been found on the coins of Brahmamitra, Sūryamitra, Vishṇumitra, Puruṣhadatta, Balabhūti and Rāmadatta of the same dynasty.[14] It has also been found on the elephant-rider type coin of Kumāragupta I. The King himself is driving the elephant with the goad in his right hand.[15] The goad resembles the modern one. (*Cf.* Pls. XL, XLVII, LI, LII, LV, LVI-LVIII)

The elephant-goad has not undergone any significant change during these hundreds of years. In later varieties it has been profusely decorated; ivory was also used for its staff.

References

1. In the *Droṇa Parva*, 148, 46, the hook is described as gilded. In the *Bhīshma Parva*, 20, 7, Duryōdhana entered the field riding on an elephant. See also *Virāṭa Parva*, 65, 6; *Drōṇa Parva*, 26, 19 *ff* and *Bhīshma Parva*, 95, 33 *ff*. Another word *toltra* mentioned in the *Mahābhārata* appears to be the same instrument.

2. Aelian, *History of Animals,* XIII, 10.
3. Maisey, *Sanchi and Its Remains,* pl. VI, fig. I; pls. XVI, XX, XXVII; A. Cunningham, pls. XI, XII and XXXIV.
4. Lady Herringham, *Ajanta Frescoes,* pl. XLII.
5. *Mānsollāsa,* p. 135, *shloka* 1182.
6. *Agnipurāṇa,* 252, 31.
7. *Ibid.*
8. Māgha, *Shishupālavadha,* XVIII, 9, 24, 39.
9. Shukrāchārya, *Nītisāra,* ch. IV, sec. VII, 11.339-40.
10. Kauṭilya, *Arthashāstra,* Book II, chapter 32.
11. *Harshacharita* translated by Cowell and Thomas, pp. 202-3.
12. Walters, I, 171.
13. John Allan, *A Cataloque of the Indian Coins in the British Museum* (1936), p. 170.
14. *Ibid.,* pp. 173-4.
15. *B.H.C.,* pl. XXXI, 1-3; *Bṛhatsaṁhitā,* 72.4 and Vidya Prakash, *op. cit.,* p. 291.

APPENDIX V

CALTROPS

INTRODUCTION

It is also spelt as 'calthrop', 'caltrap' and 'calthrap' and in Hindi it is called *gokharū*. These are spikes, either planted singly on the ground or radiating from a common centre, and strewn on the ground to prevent the advance of elephant corp or cavalry; or in a breach in fortifications to hinder the attacking troops.[1] One of the commonest forms is four spikes radiating from a common point so that in any position one stands vertically. They are the direct ancestors of the warbed wire entanglements of the present day. Many of the aboriginal tribes, like the Ādis of NEFA and the Nāgās of the Nagaland, use sharpened stakes, called *panjīs*,[2] for the same purpose.

SHISHUPĀLGARH CALTROPS

A notable find of the excavations at Shishupālgarh, about 1-1/2 miles to the east sourth-east of the town Bhubaneshvar, Orissa, is that of caltrops together with many other weapons like knife-blades, lances, spear-heads, tanged-daggers and barbed and faceted arrow-heads. As might be expected a vast majority of these weapons, including the caltrops, came mainly from the trenches across the defences and the gateway. These caltrops have been recovered for the first time in India in regular excavation and, as explained earlier, must have been used to obstruct the progress of the enemy by laming his horses and elephants.

Only one caltrop (No. SP IV G 43) has been described by the excavator, B.B.Lal.[3] It consists of four radiating spikes so arranged that whichever way the object may be thrown on the ground, one of them always projects upwards. It has been discovered from the accumulations outside the northern gateway-flank and belongs to the late level of Period III (c. 200 A.D.-350 A.D.).[4] The caltrops occur on the Roman military sites of early centuries A.D[5] in Western Europe and are, therefore, of a comparable period.

CALTROPS FROM NĀSIK

A pair of caltrops is one of the most notable finds at Nāsik.[6] After Shishupālgarh, it is the second site to yield these objects of warfare, and would take their antiquity earlier by at least four centuries. At Nāsik they were recovered from Layer (5) which is assigned to Period II A, that is between 200-300 B.C. Another point to be noted is that the Nāsik specimens, unlike those at Shishupālgarh, have perfectly tapering and sharp pointed spikes. Inspite of this feature, when thrown on the ground they rest on it with one spike always pointing upwards. No. 5100 is a heavily

rusted caltrop with three radiating spikes intact, and one broken. Length of the spikes 26, 32 and 33 mm, thickness 8, 10 and 11 mm. No. 5101 is similar to above but somewhat bigger and with only two spikes intact. Length of the spikes 41 and 43 mm, thickness 12 mm.

The caltrops have been used throughout ancient[7] and medieval period in India and a number of examples belonging to the 16th - 18th centuries A.D. are preserved in the museums and the private collections. Some very interesting *gokharū* (also called *gukharūs*) are displayed in the Maharaja Banaras Vidya Mandir Museum, Ramnagar, Varanasi (U.P.), which are datable to the 18th century A.D. and were used to arrest the progress of elephants.[8] It was revived in the early stages of the First World War (1914-18) when cavalry was reintroduced. Furthermore, similar objects were included in bombs dropped on sites in the Middle East during the Second World War (1939-45 A.D.) with a view to hindering motor transport.

Thus the idea of caltrop is an old and a new one.

References

1. G.C.Stone, *A Glossary of the Construction, Decoration and Use of Arms*, reprinted (New York, 1961), p. 158, fig. 105.
2. *Panjīs* are sharpened stakes of wood or bamboo or metal planted in the paths near the villages expecting an attack, or in those followed by a retreating army in Assam. The Āō and Maram Nāgās of Nagaland wear a curious tail as part of their war-dress that contains a pocket in which to carry *panjīs*.
3. B.B.Lal, "Shishupalgarh 1948: An Early Historical Fort in Eastern India", *Ancient India*, No. 5 (Jan., 1949), p. 95, figs. 94, 32.
4. The measurements of the caltraps found at Shishupālgarh have not been recorded but most of the caltrops of the 16th-18th centuries A.D. available today are each with four points, about one inch long.
5. These have been reported from ancient China and Japan also. *vide,* G.C.Stone, *op. cit.*, p. 158.
6. H.D.Sankalia and S.B.Deo, *Report on the Excavations at Nasik and Jorwe* 1950-51 (Poona, 1955), p. 112, fig. 52, Nos. 15, 18; pl. XXVI, No. 8.
7. Kauṭilya in his *Arthashāstra* also mentions similar obstacles being placed adjacently outside the rampart to impede the enemy's progress. *Cf.*, R. Shamasastry, *Kauṭilya's Arthashāstra,* text (Mysore, 1924), pp. 52-3, translation (Bangalore, 1929), p. 51.
8. V.P.Dwivedi, *A Brief Guide to Maharaja Banaras Vidya Mandir Museum* (Varanasi, n.d.), p. 11, fig. on p. 12.

APPENDIX VI

ROYAL KĀRKHĀNĀHS OF FIRŪZ TUGHLUQ

The royal *kārkhānāhs* (factory) owe their origin in the Sultanate period. They manufactured all articles of royal use *e.g.*, caps, shoes, curtains, taspestry, waist-bands, saddles,[1] etc. During Firūz Tughluq (1351-1388 A.D.) the *kārkhānāhs* were expanded. There were thirty-six *kārkhānāhs* each under the supervision of a noble Khān of royal dignity called *Mutasarrif.* He had to maintain the accounts of his department and submit the same to the office of the *Dīwān-i-Wiẓārat* for annual audit.[2]

During Firūz Tughluq the following persons were appointed as *Mutasarrif:*

1. *Jamdār Khānāh* (Wardrobe) - Malik Alī and Malik Ismāil.
2. *Peel Khānāh* (Elephants) - Malik Sahīn Sultānī.
3. *Shikāra Khānāh* (Preying birds) - Malik Khizr.
4. *Sileh Khānāh* (War material, arms and armour) - Malik Mubārak Kabīr.
5. *Rikāb Khānāh* (Saddlery, harness, etc.) - The department was held by the father of Sham-i-Sirāj Afif (the author of *Tārīkh-i-Firūz Shāhī*) and the historian discharged its duties on behalf of him.

All these departments provided food and fodder for the stables, kennels, kitchen, etc., and manufactured many perishable and non-perishable goods like uniforms, furniture, arms and ammunition, etc. [3] The perishable items (*ratībī*) included elephants, horses and camel stables, water cooling departments, departments of light, scent, etc. In the non-perishable (*ghair-ratībī*) goods were included clothes, carpets, arms, armour, ammunition, etc.

The chief of the *Sileh Khānāh* was called *Silehdār.* During Firūz Tughluq the chief *Silehdār* was Imādul Mulk. Then there were a large number of body-guards. They were imparted special training. Whenever the Sultān marched in a procession these surrounded him with open swords and thus added some grandeur to it. These body-guards were called *jamdārs.* The chief *jamdār* of Firūz's time was a Hindu named Rāī-Bhīrū.[4] The designation of the head of this department was *Sarjandār.*[5] These swordsmen had to wear a uniform which was supplied to them in the shape of a robe of honour. It consisted of *jāmā-i-zur-dozī* (a coat made of cloth embroidered with gold), *bandsafed* (a white belt), *kamar zarīn* (a golden girdle) and *kulah-i-Barbakī* (a Barbak cap).[6]

The highest official of the Military Department (*Dīwān-i-Āziz*) was *Āriz-i-Mumālik* (Military Commander) held by Imādul Mulk Bashīr Sultānī during Firūz. He was also the chief *Silehdār*.

NOTE

During Shivājī's time the eight *pradhāns* had under them, besides their staff, the officers incharge of the 18 *kārkhānās*[7] and twelve *mahals*.[8]

References

1. K. M. Ashraf, *Life and Condition of the People of Hindustan* (Delhi, 1950), p. 206. Muhammad Tughluk employed about four thousand manufacturers of golden tissues for brocades used by the ladies of the royal harem or given away as presents to *amīrs* and their wives.

2. Shams-i-Sirāj Afif, *Tārīkh-i-Firūz Shāhī,* edited by Wilāyat Husain (Calcutta, 1891), pp. 337-40.

3. *Ibid.*, pp. 337-38.

4. It was he who saved the Sultān from the house of Khudāvand Zādā, when the latter conspired against the Sultān.

5. The most attractive feature in the court ceremonies was the royal procession when the Sultān, accompanied by other officials, marched to the palace. Seated on a *Takht-i-rawān,* the royal canopy spread over him surrounded by *jāndārs,* with naked swords in their hands, the cavalcade moved in all its solemn grandeur. *Vide*, Jamini Mohan Banerjee, *History of Firūz Shāh Tughluq* (Delhi, 1967), p.90.

6. All the officials put on prescribed dress when in attendance at the court. It consisted of a *jāmā* made of fine cotton (*narminā*), socks and cap; *vide,* Afif, *op. cit.,* p. 280.

7. Surendranath Sen, *Administrative System of the Marathas,* third edition (Calcutta, 1976) p. 33. The 18 *kārkhānāhs* were *Khajānā* (cash), *Jawāhir-khānā* (jewel store), *Ambār-khānā* (granary), *Sharbat-khānā* (medicine), *Tōp-khānā* (artillery), *Daftār-khānā* (record department), *Jamdār-khānā* (royal wardrobe), *Jīrat-khānā* (armoury), *Mutbak-khānā* (kitchen), *Ushtar-khānā* (camels and their trappings), *Naqār-khānā* (band), *Tālim-khānā* (gymnasium), *Pīl-khānā* (elephants), *Faras-khānā* (carpets, tents, accessories), *Abdār-khānā* (drink) and *Dārū-khānā* (magazine).

8. The 12 *mahals* were *Pōte* (treasury), *Sawdagir* (merchandise), *Pālkhī* (palanquins), *Koṭhī* (warehouse), *Imārat* (building), *Bahilī* (chariot and carriages), *Pāga* (stables), *Serī* (comforts), *Darunī* (the females), *Thaṭṭī* (cowsheds), *Taṅksāl* (mint) and *Sabīnā* (guards).

APPENDIX VII

ĀIN-I-AKBARĪ ON HORSES AND CAMELS

THE RANKS OF THE HORSES

There are two classes of horses: 1. *khāṣa*; 2. those that are not *khāṣa*. The *khāṣa* horses are the following-six stables, each containing forty choice horses of Arabia and Persia; and stables of the princes; the stables of Turkish courier horses; the stables of horses bred in the Imperial studs. They have each a name, but do not exceed the number thirty. His Majesty rides upon horses of the six stables.

The second class horses are of three kinds, *viz., si-aspī, bist-aspī, dah-aspī, i.e.,* belonging to the stables of thirty, twenty and ten. A horse whose value comes up to ten *muhurs,* is kept in a *dah-muhrī* stable; those worth from eleven to twenty *muhurs,* in a *bīst-muhrī* stable, and so on.

Grandees and other *Manṣabdārs,* and senior *Aḥadīs* are in charge of the stables. Hay and crushed grain are found by the government for all horses, except the horse which the *yatāqdār* (guard) of every stable is allowed to ride, and which he maintains in grain and grass at his own expense.

Āīn 51

THE FODDER ALLOWED IN THE IMPERIAL STABLES

A *khāṣa* horse was formerly allowed eight *sérs* fodder per diem, when the *sér* weighted twenty-eight *dāms.* Now that the *sér* is fixed at thirty *dāms,* a *khāṣa* horse gets seven and a half *sérs.* In winter, they give boiled peas or vetch; in summer, grain. The daily allowance includes two *sérs* of flour and one and half *sérs* of sugar. In winter, before the horse gets fresh grass, they give it half a *sér* of *ghī.* Two *dāms* are daily allowed for hay; but hay is not given, when fresh grass is available. About three *bīghās* of land will yield sufficient fodder for a horse. When, instead of sugar, the horses get molasses, they stop the *ghī;* and when the season of fresh grass comes, they give no grain for the first three days, but allow afterwards six *sérs* of grain and two *sérs* of molasses per diem. In other Irāqī and Turkī stables, they give seven and a half *sérs* of grain. During the cool six months of the year, they give the grain boilded, and allowance of one *dām* being for boiling one *man* of it. The horses also get once a week a quarter *sér* of salt. When *ghī* and fresh grass are given, each horse, provided its price be above thirty-one *muhurs,* gets also one *sér* of sugar; whilst such as are worth from twenty-one to thirty *muhurs,* only get half a *sér.* Horses of less value get no sugar at all. Before green grass is given, horses of a value from twenty-one to upwards of one hundred *muhurs,* get

neither *ghī*, brown sugar, nor green oats. Salt is given at the daily rate one-fiftieth of a *dām*, though it is mostly given in a lump. Irāqī and Turkī horses, which belong to the court, are daily allowed two *d.* for grass; but such of them as are in the country only one and a half. In winter, each horse gets a *bīghā* of fresh oats, the price of which, at court, is 240 *d.*, and in the coutnry 200 *d.* At the time of fresh oats, each horse gets two *mans* of molasses, the same quantity being subtracted from the allowance of grain.

Experienced officers, attached to the Imperial officers, calculate the amount required, and make out an estimate, which in due course is paid. When a horse is sick, every necessary expense is paid on the certificate of the horse doctor.

Every stallion to a stud of mares receives the allowance of a *khāṣa* horse. The *gūṭ* horses get five and a half *sérs* of grain, the usual quantity of salt, and grass at the rate of one and a half *d.* per diem, if at court, and at the rate of 1-3/25 *d.*, when in the country; but they do not get *ghī,* molasses, or green oats. *Qisrāqs* (*i.e.,* female horses) get, at court, four and a half *sérs* of grain. The usual allowance of salt, and one *d.* for grass; and in the country, the same, with the exception of the grass, for which only three-fourths of a *dām* are allowed. Stud mares get two and three-fourth *sérs* of grain, but the allowance for grass, salt and fuel, is not fixed.

A foal sucks its dam for three months; after which, for nine months, it is allowed the milk of two cows; then, for six months, two and three-fourths *sérs* of grain per diem; after which period, the allowance is every six months increased by a *sér*, till it completes the third year, when its food is determined by the above regulations.

Āīn 52

ON HARNESS, ETC.

It would be difficult and tedious to describe the various ornaments, jewels and trappings used for the *khāṣa* horses on which His Majesty rides.

For the whole outfit of a *khāṣa* horse, the allowance is 277-1/2 *d.* per annum; *viz.,* an *artak,* or horse quilt, of wadded chintz, 47 *d.*; a *yālposh* (a covering for the mane), 32 *d.*; a woollen towel, 2 *d.* - these three articles are renewed every six months; in lieu of the old *artak*, half the cost price is deducted, and one-sixth for the old *yālposh*; a saddle-cloth, the outside of which is woven of hair, the lining being felt, 42 *d;* halters for the *nukhta* (headstall) and the hind feet, 40 *d.*; a *pusht-tang* (girth), 8 *d.*; a *magas-rān* (a horse tail to drive away flies), 3 *d.*; a *nukhta* and *qayza* (the bit), 14 *d.*; a curry-comb, 1-1/2 *d.*; a grain bag 6 *d.*; a basket, in which the horse gets its grain, 1 *d.* These articles are given annually, and fifteen *dāms*, ten *jetals,* subtracted in lieu of the old ones.

In the other stables, the allowance for horses whose value is not less than twenty-one *muhurs,* is 196-1 1/2 *d.* per annum, the rate of the articles, being the same. Twenty-five and half *dāms* are subtracted in lieu of the old articles.

In stables of horses worth twenty to eleven *muhurs*, the annual allowance is 155- 1/4 *d.; viz.,* for the *artak,* 39- 3/4 *d.;* the *yālposh,* 27-1/4 *d.;* a coarse saddle-cloth, 30 *d.*; the girth, 6 *d.*; the *nukhta* and *qayza,* 10 *d.;* and the *nukhta* ropes and feet-ropes, 32 *d.;* the *magas-rān,* 2 *d.,* a towel, 1-1/2 *d.;*

a curry-comb, 1-1/4 *d.;* a basket, 1 *d.*, a grain bag, 4-1/2 *d.* Twenty *dāms* are subtracted for the old articles.

For horses worth up to ten *muhurs* and *qisrāqs*, and *gūṭ*, the allowance is 117-1/4 *d.*; *viz.*, an *artak*, 37 *d.*; a *yālposh*, 24-1/2 *d.*; a *nuḳhta- band* and *pāy-band*, 8 *d.;* a *nuḳhtā* and *qayza*, 8 *d.;* a *pusht-tang,* 5 *d.*; a *magas-rān* and a towel, each 1-1/2 *d*; a curry-comb, 1-1/4 *d.*; a basket, 1 *d.*; a grain bag, 4-1/2 *d.* The amount subtracted is the same as before.

1. The *karāh* is an iron vessel for boiling grain sufficient for ten horses The price of a *karāh* is at the rate of one hundred and forty *dāms* per *man* of iron; but this includes the wages of the makers
2. The *missīn saṭl* or brass bucket, out of which horses drink. There is one for every ten *khāṣa* horses. The price of making one is 140 *d.* For other horses, as in the stables of thirty, etc., there is only one.
3. The *kamand*, attached to iron pegs, is for fastening the horses. In stables of forty, there are three; in stables of thirty, two; in others, one. The weight of a halter is half a *man*; its cost price is 140 *d.*; and 16 *d.* are the wages of the rope maker.
4. The *āhanīn meḳh* or iron peg, of which there are two for every halter. Each peg weighs five *sérs* and costs 15 *d.*
5. The *tabartuḳhmāq* or hammer, weighs five *sérs*, and is used for fixing the iron pegs. There is one in every stable.

All broken and old utensils of brass and iron, in the *khāṣa* stables, if repairable, are repaired at the expense of the *Dārogḥās*; and when they are past mending, their present value is deducted, and the difference paid in cash. In other stables, a deduction one-half of their value is made every third year.

6. *Nāāl* or horse-shoes, are renewed twice a year. Formerly eight *dāms* were given for a whole set, but now ten.
7. *Kūndlān*, one is allowed for ten horses. The price of it is 80-3/4 *R.*

Āīn 53

THE OFFICERS AND SERVANTS ATTACHED TO THE IMPERIAL STABLES

1. The *Atbégī* is in charge of all horses belonging to the government. He directs all officers charged with the management of the horses. This office is one of the highest of the State and is only held by grandees of high rank; at present it is filled by the *Khān Khānān* (Commander-in-chief).
2. The *Dāroghā*. There is one appointed for each stable. This post may be held by officers of the rank of commanders of five thousand down to senior *Aḥadīs*.

3. The *Mushrif* or accountant. He keeps the roll of the horses, manages all payments and fines, sees that His Majesty's orders are carried out, and prepares the estimate of the stores required for this department. He is chosen from among the grandees.

4. The *Dīda-war* or inspector. His duty is occasionally to inspect the horses before they are mustered by His Majesty; he also determines the rank and the condition of the horse. His reports are taken down by the *Mushrif*.

5. The *Aḳhtachīs* look after the harness and have the horses saddled. Most of them get their pay on the list of the *Aḥadīs*.

6. The *Chābuksuwār* rides the horses and compares their speed with the road, which is likewise taken down by the *Mushrif*. He receives the pay of an *Aḥadī*.

7. The *Hāḍā*. This name is given to a class of *Rājpūts* who teach horses the elementary steps. Some of them get their pay on the list of the *Aḥadīs*.

8. The *Mīrdaha* is an experienced groom placed over ten servants. He gets the pay of an *Aḥadī*; but in other *khāṣa* stables, he only gets 170 *d.*, in the country-bred stables, 160 *d.;* in the other *si-aspī* stables, 140 *d.;* in the *bīst-aspī* stables, 100 *d.* and in the *dah-aspī* stables, 30 *d.* Besides he had to look after two horses.

9. The *Bayṭar* or horse-doctor, gets the pay of an *Aḥadī*.

10. The *Naqīb* or watcher. Some active, intelligent men are retained for supervision. They report the condition of each stables to the *Dārogḥās* and the *Mushrif*, and it is their duty to have the cattle in readiness. The two head *Naqībs* are *Aḥadīs*, and they have thirty people under them, who receive from 100 to 120 *d.*

11. The *Sāis* or groom. There is one groom for every two horses. In the *chihil-aspī* stables, each groom gets 170 *d.;* in the stables of the eldest prince, 138 *d.;* in the stables of the other princes, and in the courier horses stables, 136 *d.;* in the country bred stables 126 *d.;* in the other *si-aspī* stables, 106 *d;* in the *bīst-aspī* stables 103 *d.;* and in the *dah-aspī* stables 100 *d.;*

12. The *Jilawdār* (*vide, Āīn* 60*)* and the *Pāyk* (a runner). Their monthly pay varies from 100 to 120 *d.;* according to their speed and manner of service. Some of them will run from fifty to one hundred *kroh (kos)* a day.

13. The *Nālband* or farrier. Some of them are *Aḥadīs*, some foot-soldiers. They receive 160 *d.*

14. The *Zīndār* or saddle-holder, has the same rank and pay as the preceding. In the *kḥāṣa* stable of forty horses, one saddle is allowed for every two horses, in the following manner; for the first and twenty-first; for the second and twenty-second, and so on. If the first horse is sent out of the stable, the saddle remains at its place, and what was the second horse becomes first, and the second saddle falls to the third horse, and so on to the end. If a horse out of the middle leaves, its saddle is given to the preceding horse.

15. The *Ābkash* or water-carrier. Three are allowed in the stables of forty; two in stables of thirty, and only one in other stables. The monthly pay is 100 *d.*

16. The *Farrāsh* (who dusts the furniture). There is one in every *khāṣa* stable. His pay is 130 *d.*

17. A *Sipandsoz* is only allowed in the stables of forty horses; his pay is 100 *d.*

18. The *Kḥākrūb*, or sweeper. Sweepers are called in Hindustan *Halālkhur*. His Majesty brought this name en vogue. In stables of forty, there are two; in those of thirty and twenty, one. Their monthly pay is 65 *d.*

During a march, if the *Dārogḥās* are in receipt of a fixed allowance for coolies, they entertain some people to lead the horses. In the stables of thirty horses, fifteen are allowed. And in the same proportion does the government appoint coollies, when a *Dārogḥā* has not received the extra allowance. Each coollie gets two *dāms* per diem.

Āīn 54

THE BĀRGĪR

His Majesty, from the regard which he pays to difference in rank, believes many fit for cavalry service, though he would not trust them with the keeping of a horse. For these he has told off separate stables, with particular *Dārogḥās* and *Mushrifs*. When their services are required, they are furnished with a horse on a written order of the *Bitikchī* (writer); but they have not to trouble themselves about the keeping of the horse. A man so mounted is called a *Bārgīrsuwār*.

Āīn 55

REGULATIONS FOR BRANDING HORSES

In order to prevent fraudulent exchanges, and to remove the stamp of doubtful ownership, horses were for some time marked with the word *nazr* (sight), sometimes with the word *dāgh* (mark), and sometimes with the numeral (seven). Every horse that was received by government had the mark burnt on the right cheek; and those that were returned, on the left side. Sometimes with the numeral (seven). Every horse that was received by government had the mark burnt on the right cheek; and those that were returned, on the left side. Sometimes, in the case of Irāqī and Mujannas horses, they branded the price in numerals on the right cheek; and in the case of Turkī and Arab horses, on the left. Now a days the horses of every stable are distinguished by their price in numerals. Thus, a horse of ten *muhurs* is marked with the numeral ten; those of twenty *muhurs* have a twenty, and so on. When horses, at the time of the musters, are put into a higher or a lower grade, the old brand is removed.

Āīn 56

REGULATIONS FOR KEEPING UP THE FULL COMPLEMENT OF HORSES

Formerly, whenever there had been taken away either ten horses from the stables of forty, or from the stud-bred horses, or five from the courier horses, they were replaced in the following

manner. The deficiency in the stables of forty was made up from horses chosen from the princes; the stud -bred horses were replaced by other stud-bred ones, and the courier horses from other stables. Again, if there were wanting fifteen horses in the stables of the eldest prince (Salīm), they were replaced by good horses of his brothers; and if twenty were wanting in the stables of the second prince (Murād), the deficiency was made up by horses taken from the stables of the youngest prince and from other stables; and if twenty-five were wanting in the stables of the youngest prince (Dānyāl), the deficiency was made up from other good stables.

But in the thirty-seventh year of the Divine Era (A.D. 1593), the order was given that, in future, one horse should annually be added to each stable. Thus, when in the present year, the deficiency in the *kẖāṣa* stables had come up to eleven, they commenced to make up the complement, the deficiency of the other stables being made up at the time of the muster parades.

Āīn 57

ON FINES

When a *kẖāṣa* horse dies, the *Dārogẖā* has to pay one rupee, and the *Mīrdaha* ten *d.*, upto every *muhur* of the cost price; and the grooms lose one-fourth of their monthly wages. When a horse is stolen, or injured, His Majesty determines the fine, as it cannot be uniform in each case.

In the other stables they exacted from the *Dārogẖā* for a single horse that dies, one rupee upon every *muhur*; for two horses, two rupees upon every *muhur*; and from the *Mīrdaha* and the grooms the above proportions. But now they take one rupee upon every *muhur* for one to three horses that die; and two upon every *muhur* for four horses; and three upon every *muhur* for five.

If the mouth of a horse gets injured, the *Mīrdaha* is fined ten *dām* upon every *muhur*, which fine he recovers from the other grooms.

Āīn 58

ON HORSES KEPT IN READINESS

There are always kept in readiness two *kẖāṣa* horses; but of courier-horses, three, and one of each stable from the seventy *muhurs* down to the ten *muhur* stables and the *gūṭs*. They are formed into four division and each division is called a *miṣl.*

Firts *miṣl* : one from the *chihilaspī* stables; one from the stable of the eldest prince; one from those of the second prince; one from the stable of *kẖāṣa* courier horses. Second *miṣl.*: one from the stable of the youngest prince; one from the stud-bred; one from the *chihilaspī* stables; one courier-horse. Third *miṣl.* : one horse from the stables of the three princes; one stud-bred. Fourth *miṣl.*: one horse from each of the stables of horses of forty, thirty, twenty and ten *muhurs.*

His Majesty rides very rarely on horses of the fourth *miṣl.* But when Prince Shāh Murād joined his appointment, His Majesty also rode the best horses of the stables of forty *muhurs.* The arrangement was then as follows. First *miṣl*, one horse from the stables of forty; one horse from the stables of the eldest and the youngest prince, and a courier-horse. Second *miṣl*, stud-bred horses from the stables of horses above seventy *muhurs*, *kẖāṣa* horses of forty *muhurs*, and courier-horses.

Third *miṣl*, one horse from the stables of each of the two princes, the stud-bred, and the seventy *muhur* horses. Fourth *miṣl*, horses from the stables of sixty, forty and thirty *muhurs*.

Horses are also kept in readiness from the stables of twenty and ten *muhurs* and the *gūṭs*.

Āīn 59

ON DONATIONS

Whenever His Majesty mounts a horse belonging to one of the six *kẖāṣa* stables, he gives something, according to a fixed rule, with a view of increasing the zeal and desire for improvement among the servants. For some time it was a rule that, whenever he rode out on a *kẖāṣa* horse, a rupee should be given, *viz.*, one *dām* to the *Ātbegī*, two to the *Jilawdār*; eighteeen and one-half to the grooms, the rest being shared by the *Mushrif*, the *Naqīb*, the *Ākhtachī* and the *Zīndār*. In the case of horses belonging to the stables of the eldest prince, thirty *dāms* were given, each of the former recipients getting a quarter of a *dām* less. For horses belonging to stables of the second prince, twenty *dāms* were given, the donations decreasing by the same fraction; and for horses belonging to the stable of the youngest prince as also for courier-horses, and stud-breds, ten *dāms*, according to the same manner of distribution.

Now, the following donations are given: for a horse of a stable of forty, one rupee as before; for a horse belonging to a stable of the eldest prince, twenty *dāms*; for a horse belonging to the youngest prince, ten *dāms*; for courier-horses, five; for stud-breds, four; for horses of other stables, two.

Āīn 60

REGULATIONS FOR THE JILAWĀNA

Whenever a horse is given away as a present, the price of the horse is calculated fifty per cent higher, and the recipient has to pay ten *dāms* upon every *muhur* of the value of the horse. These ten *dāms* per *muhur* are divided as follows: the *Ātbegī* gets five *dāms*; the *Jilawbegī*, two and a half; the *Mushrif*, one and a quarter; the *Naqībs* nine *jetals*; the grooms, a quarter *dām*; the *Mushrif*, one and a quarter; the *Naqībs* nine *jetals*; the grooms, a quarter *dām*; the *Tahsīldār*, fifteen *jetals*; the remainder is equally divided among the *Zīndār* and *Akhtachī*.

In this country horses commonly live to the age of thirty years. Their price varies from 500 *muhurs* to 2 rupees.

Āīn 61

THE CAMEL STABLES

From the time His Majesty paid regard to the affairs of the state, he has shown a great liking for this curiously shaped animal; and as it is of great use for the three branches of the Government, and well known to the Emperor for its patience under burdens, and for its contenment with little food, it has received every care at the hands of His Majesty. The quality of the country breed improved very much, and Indian camels soon surpassed those of Irān and Tūrān.

Fig. 231 A camel carrying war drums

From a regard to the dignity of his court, and the diversion of others, His Majesty orders camel-fights, for which purpose several choice animals are always kept in readiness. The best of these *khāṣa* camels, which is named *Shāhpasand* (approved of by Shāh), is a country-bred twelve years old; it overcomes all its antagonists, and exhibits in the manner in which it stoops down and draws itself up every finesse of the art of wrestling.

Camels are numerous near Ajmir, Jodhpur, Nagor, Bikanir, Jaisalmir, Batinda, and Bhatnir; the best are bred in the Sūbā of Gujarat, near Cachh. But in Sind is the greatest abundance; many inhabitants own ten thousand camels and upwards. The swiftest camels are those of Ajmir; the best for burden are bred in Thatha.

The success of this department depends on the *arwānas*, *i.e.*, female camels. In every country they get hot in winter and couple. The male of two humps goes by the name of *Bughur*. The young ones of camels are called *nar* (male) and *māya* (female), as the case may be; but His Majesty has given to the *nar* the name of *bughdī*, and to the female that of *jammāza*. The *bughdī* is better for carrying burdens and for fighting; the *jammāza* excels in swiftness. The Indian camel called *lok*, and its female, come close to them in swiftness, and even surpass them. The offspring of a *bughur* and a *jammāza* goes by the name of *ghurd*; the female is called *māya ghurd*. If a *bughdī* or a *lok*, couples with a *jammāza*, the young one is called *bughdī* or *lok* respectively. Buf if a *bughdī* or a *lok* couples with an *arwāna*, the young male is named after its sire and the young female after its dam. The *lok* is considered superior to the *ghurd* and the *māya ghurd*.

When camels are loaded and travel, they are generally formed into *qatārs* (strings), each *qatār* consisting of five camels. The first camel of each *qatārs*, consisting of five camels, is called *peshang*; the second *peshdara*; the third *miyāna qatār;* the fourth, *dumdast*; the last camel, *dumdār*.

Āīn 62

THE FOOD OF CAMELS

The following is the allowance of such *bughdīs* as are to carry burdens. At the age of two and a half or three years, when they are taken from the herd of the stud *dāms*, a *bughdī* gets 2 s. (*sér*) of grain; when three and a half to four years old, 5 *s.*; up to seven years, 9 *s.*; at eight years, 10 *s.* The same rule applies to *bughurs*. Similarly, in the case of *jammāzas*, *ghurds*, *māya ghurds* and *loks*, up to four years of age; but from the fourth to the seventh year, they get 7 *s.*; and at the age of eight years, 7-1/2 *s.*, at the rate of 28 *dāms* per *sér*. As the *sér* has now 30 *dāms*, a corresponding deduction is made in the allowance. When *bughdīs* are in heat, they eat less. Hence also concession is made, if they get lean, to the extent of 10 *s.*, according to provision of the *Pāgosht* rule (*Āīn* 83); and when the rutting season is over, the *Dāroghās* give out a correspoinding extra allowance of grain to make up for the former deficiency. If they have made a definite entry into their day-book, and give out more food, they are held indemnified according to the *Pāgosht* rule; and similarly, in all other cases, note is taken of the deductions according to that rule.

At Court, camels are fed in grass by the government for eight months. Camels on duty inside the town are daily allowed grass at the rate of 2 *d.* per head; and close outside the town, 1-1/2 *d.*

During the four rainy months, and on the march, no allowance is given, the drivers take the camels to meadows to graze.

Āīn 63

THE HARNESS OF CAMELS

The following articles are allowed for *khāṣa* camels: an *afsār* (head stall); a *dum-afsār* (crupper); a *mahar kāṭhī* (furniture resembling a horse-saddle but rather longer - an invention of His Majesty); a *kūchī* (which serves as a saddle-cloth); a *qatārchī*; a *sarbchī*; a *tang* (a girth); a *sartang* (a head-strap); a *shebband* (a loin-strap); a *jalājil* (a breast rope adorned with shells or bells); a *gardanband* (a neck-strap); three *chādars* (or coverings) made of broad-cloth, or variegated canvas, or waxcloth. The value of the jewels, inlaid work, trimmings and silk, used for adorning the above articles, goes beyond description.

Five *qatārs* of camels, properly caparisoned, are always kept ready for riding, together with two for carrying a *miḥaffa*, which is a sort of wooden turret, very comfortable, with two poles, by which it is suspended, at the time of travelling, between two camels.

A camel's furniture is either coloured or plain. For every ten *qatārs* they allow three *qatārs* coloured articles.

For *bughdīs*, the cost of the (coloured) furniture is 225-3/4 *d., viz.,* a head-stall studded with shells, 20-1/2 *d.*; a brass ring 1-1/2 *d.*; an iron chain, 4-1/2 *d.*; a *kallagī* (an ornament in shape of a rosette, generally made of peacock's feathers, with a stone in the centre), 5 *d.*; a *pushtpozī* (ornaments for the strap which passes along the back), 8 *d.*; a *dum-afsār* (a crupper), 1-1/2 *d.*; for a *takaltū* (saddle-quilt) and a *sarbchī*, both of which require 5 *sérs* of cotton, 20 *d.*; a *jul* (saddle-cloth), 68 *d.*; a *jahāz-i-gajkārī*, which serves as a *mahārkāṭhī* (*vide* above), 40 *d.*; a *tang, shebband, gulūband* (throat-strap), 24 *d.*; a *tanāb* (long rope for securing the burden - camel-drivers call this rope *ṭāqa ṭanāb*, or *kharwār* - 38 *d.*; a *bālāposh* or covering, 15 *d.*

For *jammāzas*, two additional articles are allowed, *viz.*, a *gardanband*, 2 *d.*; and a *sīnā-band* (chest-strap), 16 *d.*

The cost of a set of plain furniture for *bughdīs* and *jammāzas* amounts to 168-1/2 *d.; viz.*, an *afsār*, studded with shells, 10 *d.*; a *dum-afsār*, 1/2*d.*; a *jahāz*, 16-1/2 *d.*; a *jul*, 52-1/2 *d.*; a *tang*, a *shebband*, and *gulūband*, 24 *d.*; a *tāqā ṭanāb*, 37-1/2 *d.*, a *bālāposh*, 28 *d.*

For *loks*, the allowance for furniture is 143 *d.; viz.*, an *afsār, jahāz, kharwār*, according to the former rates; a *jul*, 37-1/2 *d.*; a *tang, shebband, gulūband*, 14-1/2 *d.*; a *bālāposh*, 28 *d.*

The coloured and plain furniture is renewed once in three years, but not so the iron bands and wood work. In consideration of the old coloured furniture of every *qatār*, sixteen *dāms*, and of plain furniture, fourteen *dāms*, are deducted by the Government. At the end of every three years they draw out an estimate, from which one-fourth is deducted; then, after taking away one-tenth of the remainder, an assignment is given for the rest.

Alafī camels (used for foraging) have their furniture renewed annually, at the cost of 52-1/2 *d.* for country-bred camels, and *loks, viz.* (for country-bred camels) an *afsār*, 5 *d.*; a *jul*, 36-1/2 *d.*;

a *sardoz,* 1/2 *d.*; a *tang* and a *shebband*, 10-3/4 *d.*; and (for *loks*), an *afsār*, a *tang* and a *shebband*, as before; a *jul* 45-3/4 *d.*; a *sardoz*, 3/4 *d.*

From the annual estimate one-fourth is deducted, and an assignment is given for the remainder.

Shalīta ṭāṭs, or canvas sacks, for giving camels their grain, are allowed one for every *qatār*, at a price of 30-3/4 *d.* for *bugḥdīs* and *jammāzas*, and 24-1/2 *d.* for *loks*.

Hitherto the cost of these articles had been uniformly computed and fixed by contract with the camel-drivers. But when, in the forty-second year of the Divine Era (1598 A.D.), it was brought to the notice of His Majesty that these people were, to a certain extent, losers, this regulation was abolished, and the current market price allowed for all articles. The price is, therefore, no longer fixed.

On every New Year's daý, the head camel-drivers receive permission for shearing the camels, anointing them with oil, injecting oil into the noses of the animals, and indenting for the furniture allowed to *alafī* camels.

Āīn 64

REGULATIONS FOR OILING CAMESLS INJECTING OIL INTO THEIR NOSTRILS

The scientific terms for these operations are *taṭliya* and *tajrī*, though we might expect *taṭliya* and *tanshīq,* because *tanshīq* means injecting into the nose.

For each *bugḥdī* and *jammāza* 3-3/4 *sérs* of sesame oil are annually allowed, *viz.*, three *sérs* for anointing, and 3/4 *sérs* for injection into the nose. So also 3/4 *s.* of brimstone, and 6-1/2 *s.* of butter-milk. For other kinds of camels the allowance is 5/8 *s.* of brimstone, 6-1/2 *s.* of butter-milk, and 3/4 *s.* of grease for injecting into the nose-holes.

Formerly these operations were repeated three times, but now only once a year.

Āīn 65

THE RANKS OF THE CAMELS, AND THEIR SERVANTS

His Majesty has formed the camels into *qatārs*, and given each *qatār* in charge of *sārbān* or driver. Their wages are four-fold. The first class get 400 *d.;* the second, 340 *d.;* the third, 280 *d.;* the fourth, 220 *d.;* per mensem.

The *qatārs* are of three kinds:-

1. Every five *qatārs* are in charge of an experienced man, called *Bistopanjī*, or commander of twenty-five. His salary is 720 *d.* He marks a *Yābu* horse, and has four drivers under him.
2. Double the preceding, or ten *qatārs*, are committed to the care of *Panjahi*, or commander of fifty. He is allowed a horse, draws 960 *d.* and has nine drivers under him.
3. Every hundred *qatārs* are in charge of a *Panjṣadī* or commander of five hundred. Ten *qatārs* are under his personal superintendence. With the exception of one *qatārs*, Government finds drivers for the others. The *Panjāhīs* and *Bīstopanjī* are under his orders.

Their salary varies; now a days many *Yūzbāshīs* are appointed to this post. One camel is sold off for the *farrāshes*. A writer also has been appointed. His Majesty, from his practical knowledge, has placed each *Panişadī* under a grandee of the court. Several active foot-soldiers have been selected to inquire from time to time into the condition of the camels, so that there may be no neglect. Besides, twice a year some people adorned with the jewel of insight inspect the camels as to their leanness or fatness at the beginning of the rains and at the time of the annual muster.

Should a camel get lost, the *Sārbān* is fined the full value; so also the *Panjāhī* and the *Panjşadī*. If a camel get lame or blind, he is fined the fourth part of the price.

RAIBĀRĪ

Raibārī is the name given to a class of Hindus who are acquainted with the habits of the camel. They teach the country-bred *lok* camel so to step, as to pass over great distances in a short time. Although from the capital to the frontiers of the empire, in every direction, relay horses are stationed, and swift runners have been posted at the distance of every five *kos*, a few of these camel riders are kept at the palace in readiness. Each *Raibārī* is also put incharge of fifty stud *arwānas*, to which for the purpose of breeding, one *bugḥur* and two *loks* are attached. The latter (the males) get the usual allowance of grain, but nothing for grass. The fifty *arwānas* get no allowance for grain or grass. For every *bugḥur, bugḥdī* and *jammāza* in the stud, the allowance for oiling and injecting into the nostrils is 4 *s.* of sesame oil, 3/4 *s.* of brimstone, 6-1/2 *s.* of butter-milk. The first includes 3/4 *s.* of oil for injection. *Loks, arwānas, ghurds,* and *māya ghurds* get only 3-1 5/8 *s.* of sesame oil. The deduction is made for injection - 6-1/2 *s.* of butter-milk, and 5/8 *s.* of brimstone.

Botas and *dumbālas* - these names are given to young camels; the former is used for light burdens; they are allowed 2-1/2 *s.* of oil, inclusive of 1/2 *s.* for injection into the nostrils, 1/2 *s.* of brimstone and 4-1/2 *s.* of butter-milk.

Full-grown stud-camels get weekly 1/2 *s.* of saltpetre and common salt; *botas* get 3/4 *s.*

The wages of a herdsman is 200 *d.* per mensem. For grazing every fifty stud-camels, he is allowed five assistants, each of whom gets 2 *d.* per diem. A herdsman of two herds of fifty is obliged to present to His Majesty three *arwānas* every years; on failure, their price is deducted from his salary.

Formerly the state used to exact a fourth part of the wool sheared from every *bughdī* and *jammāza*, each camel being assessed to yield four *sérs* of wool. This His Majesty has remitted, and in lieu thereof, has ordered the drivers to provide their camels with *dum-afsārs,* wooden pegs, etc.

The following are the prices of camels:- a *bughdī*, from 5 to 12 *muhurs*; a *jammāza,* from 3 to 10 *M.*; a *bughur,* from 3 to 7 *M.*; a mongrel *lok* from 8 to 9 *M.*; a country-bred or a Balūchī *lok*, from 3 to 8 *M.*; an *arwāna*, from 2 to 4 *M.*

His Majesty has regulated the burdens to be carried by camels. A first class *bughdī*, not more than 10 *mans*; a second class., 8 *m.;* superior *jammāzas, loks*, etc. 8 *m.*; a second class., 6 *m.*

In this country camels do not live above twenty-four years.

APPENDIX VIII

ĀIN-I-AKBARĪ ON ELEPHANTS

Āīn 41

THE IMPERIAL ELEPHANT STABLES

This wonderful animal is in bulk and strength like a mountain; and in courage and ferocity like a lion. It adds materially to pomp of a king and to the success of a conqueror; and is of the greatest use for the army. Experienced men of Hindustan put the value of a good elephant equal to five hundred horses; and they believe that, when guided by a few bold men armed with matchlocks, such an elephant alone is worth double that number. In vehemence on one side, and submissiveness to the reins on the other, the elephant is like an Arab, whilst in point of obedience and attentiveness to even the slightest signs, it resembles an intelligent human being. In restiveness when full -blooded, and in vindictiveness, it surpasses man. An elephant never hurts the female, though she be the caue of his captivity; he never will fight with young elephants, nor does he think it proper to punish them. From a sense of gratitude, he does his keepers no harm, nor will he throw dust over his body when he is mounted, though he often does so at other times. Once an elephant, during the rutting season, was fighting with another. When he was in the height of excitement a small elephant came in his way; he kindly lifted up the small one with his trunk, set him aside, and then renewed the combat. If a male elephant breaks loose during the rutting season in order to have his own way, few people have the courage to approach him; and some bold and experienced man will have to get on a female elephant; and try to get near him and tie a rope round his foot. Female elephants, when mourning the loss of a young one, will often abstain from food and drink; they sometimes even die from grief.

The elephant can be taught various feats. He learns to remember such melodies as can only be remembered by people acquainted with music; he will move his limbs to keep time, and exhibit his skill in various ways. He will shoot off an arrow from a bow, discharge a matchlock, and will learn to pick up things that have been dropped and hand them over to the keeper. Sometimes they get grain to eat wrapped up in hay; this they hide in the side of their mouth, and give it back to the keeper, when they are alone with him.

The teats of a female elephant, and the womb, resemble those of a woman. The tongue is round like that of a parrot. The testicles are not visible. Elephants frequently with their trunks take water out of their stomachs, and sprinkle themselves with it. Such water has no offensive smell. They

also take out of their stomach grass on the second day, without its having undergone any change.

The price of an elephant varies from a *lak* to one hundred rupees; elephants worth five thousand, and ten thousand rupees, are pretty common.

There are four kinds of elephants.

1. *Bhaddar:* It is well proportioned, has an erect head, a broad chest, large ears, a long tail, and is bold, and can bear fatigue. They take out of his forehead an excrescence resembling a large pearl, which they call in Hindi Gaj *Mānik*. Many properties are ascribed to it.
2. *Mand*: It is black, has yellow eyes, a uniformly sized belly, a long penis, and is wild and ungovernable.
3. *Mirg* - It has a whitish skin with black spots; the colour of its eyes is a mixture of red, yellow, black and white.
4. *Mir* - It has a small head, and obeys readily. It gets frightened when it thunders.

From a mixture of these four kinds are formed others of different names and properties. The colour of the skin of elephants is threefold; white, black, grey. Again, according to the threefold division of the dispositions assigned by the Hindus to the mind, namely, *sat* (benevolence), *raj* (love of sensual enjoyment) and *tam* (irascibility), which shall be further explained below, elephants are divided into three classes. First, such in which *sat* predominates. They are well proportioned, good looking, eat moderately, are very submissive, do not care for intercourse with the female, and live a very old age. Secondly, such in whose disposition *raj* prevails. They are savage-looking and proud, bold, ungovernable and voracious. Lastly, such as are full of *tam*. They are self-willed, destructive, and given to sleep and voraciousness.

The time of gestation of the female is generally eighteen lunar months. For three months the *fluida germinalia* intermix in the womb of the female; when agitated the mass looks like quicksilver. Towards the fifth month the *fluida* settle and get gelatinous. In the seventh month, they get more solid and draw to perfection towards the ninth month. In the eleventh, the outline of a body is visible; and in the twelfth, the veins, bones, hoofs and hairs make their appearance. In the thirteenth month the *genitalia* become distinguishable, and in the fifteenth, the process of quickening commences. If the female, during gestation, gets stronger, the foetus is sure to be a male; but if she gets weak it is the sign of a female. During the sixteenth month the formation becomes still more perfect, and the life of the foetus becomes quite distinct. In the seventeenth month there is every chance of a premature birth on account of the efforts made by the foetus to move, till, in the eighteenth month, the young one is born.

According to others the sperm gets solid in the first month; the eyes, ears, nose, mouth, and tongue are formed in the second; in the third month, the limbs make their appearance; in the fourth month, the foetus grows and gets strong; in the fifth, it commences to quicken; in the sixth, it gets sense, which appears more marked during the seventh month; in the eighth, there is some chance of miscarriage; during the ninth, tenth, and eleventh months the foetus grows, and is born during the twelfth. It will be a male young one if the greater part of the sperm came from the male; and

it will be a female young one if the reverse is the case. If the sperm of both the male and female is equal in quantity the young one will be hermaphrodite. The male foetus lies towards the right side; the female towards the left; a hermaphrodite in the middle.

Female elephants have often for twelve days a red discharge, after which gestation commences. During that period they look startled, sprinkle themselves with water and earth, keep ears and tail upwards, and go rarely away from the male. They will rub themselves against the male, bend their heads below his tusks, smell at his urine and dung, and cannot bear to see another female near him. Sometimes, however, a female shows aversion to intercourse with the male; and must be forced to copulate, when other female elephants, at hearing her noise, will come to her rescue.

In former times, people did not breed elephants, and thought it unlucky; by the command of His Majesty, they now breed a very superior class of elephants, which has removed the old prejudice in the minds of men. A female elephant has generally one young one, but sometimes two. For five years the young ones content themselves with the milk of the mother; after that period they commence to eat herbs. In this state they are called *bāl*. When ten years old they are named *pūt;* when twenty years old, *bikka*; when thirty years old, *kalba*. In fact the animal changes appearance every year, and then gets a new name. When sixty years old, the elephant is full grown. The skull then looks like two halves of a ball, whilst the ears look like winnowing fans. White eyes mixed with yellow, black and red, are looked upon as a sign of excellence. The forehead must be flat without swellings or wrinkles. The trunk is the nose of the animal and is so long as to touch the ground. With it, it takes up the food and puts it into the mouth; similarly, it sucks up water with it, and then throws it into the stomach. It has eighteen teeth; sixteen of them are inside the mouth, eight above and eight below, and two are the tusks outside. The latter are one and more yards long, round, shining, very strong, white or sometimes reddish and straight, the end slightly bent upwards. Some elephants have four tusks. With a view to usefulness as also to ornament, they cut off the top of the tusks which grow again. With some elephants they have to cut the tusks annually; with others after two or three years; but they do not like to cut them when an elephant is ten and eighty years old. An elephant is perfect when it is eight *dast* high, nine *dast* long, and ten *dast* round the belly and hind feet, the trunk, the tusks, the penis, the tail. White spots on the forehead are considered lucky, whilst a thick neck is looked upon as sign of beauty. Long hairs on and about the ears point to good origin.

Some elephants rut in winter, some in summer, some in the rains. They are then very fierce, they pull down houses, throw down stone walls, and will lift up with their trunks a horse and its rider. But elephants differ very much in the amount of fierceness and boldness.

When they are hot, a blackish discharge exudes from the soft parts between the ears and the temples, which has a most offensive smell; it is sometimes whitish, mixed with red. They say that elephants have twelve holes in those soft parts, which likewise discharge the offensive fluid. The discharge is abundant in lively animals, but trickles drop by drop in slow ones. As soon as the discharge stops, the elephant gets fierce and looks grand; in this state he gets the name of *tafṭī* or *sarahrī*. When the above discharge exudes from a place a little higher than the soft parts between the ears and temples, the elephant is called *singāḍhal*; and when the fluid trickles from all three places, *tal-jor*. When in heat, elephants get attached to particular living creatures, as man or

horses; but some elephants to any animal. So at least according to Hindu books.

The *bhaddar* ruts in Libra and Scorpio; the *mand* in Spring; the *mirg* in Capricorn and Sagittarius; the *mir* in any season. Elephant drivers have a drug which causes an artificial heat; but it often endangers the life of the beast. The noise of battle makes some superior elephants just as fierce as at the rutting season; even a sudden start may have such an effect. Thus, His Majesty's elephant *Gajmukta*; he gets brisk as soon as he hears the sound of the imperial drum, and gets the above mentioned discharge. This peculiar heat generally makes its first appearance when elephants have reached the age of thirty; sometimes, however, earlier, at an age of twenty-five. Sometimes the heat lasts for years, and some of the imperial elephants have continued for five years in an uninterrupted alacrity. But it is mostly male elephants that get in heat. They then commence to throw up earth, and run after a female, or roll about in mud, and daub themselves all over with dirt. When in heat they are very irritable, and yawn a great deal, though they sleep but little. At last they even discontinue eating, and dislike the foot-chain; they try to get loose, and behave noisily.

The elephant, like man, lives to an age of one hundred and twenty years.

The Hindi language has several words for an elephant, as *hast, gaj, pīl, hāthī,* etc. Under the hands of an experienced keeper it will much improve, so that its value in a short time may rise from one hundred to ten thousand rupees.

The Hindus believe that the eight points of the earth are each guarded by a heavenly being in the shape of an elephant; they have curious legends regarding them. Their names are as follows:

1. *Airāwata,* in the east
2. *Pundarīka*, south-east
3. *Bāman*, south
4. *Kumada*, south-west
5. *Anjan,* west
6. *Pushpadanta,* north-west
7. *Sārbhabhūma,* north
8. *Supratīka,* north-east.

When occasions arise, people read incantations in their names, and address them in worship. They also think that every elephant in the world is the offspring of one of them. Thus, elephants of a white skin and white hairs are related to the first; elephants with a large head and long hairs, of a fierce and bold temper and eyelids apart, belong to the second; such as are good looking, black, and high in the back, are the offspring of the third; if tall, ungovernable, quick in understanding, short-haired, and with red and black eyes, they come from the fourth; if bright black, with one tusk longer than the other, with a white breast and belly and long and thick forefeet, from the fifth; if fearful, with prominent veins, with a short hump and ears and long trunk, from the sixth; if thin-bellied, red-eyed, and with a long trunk, from the seventh; and if of a combination of the preceding seven qualities, from eighth.

The Hindus also make the following division into eight classes:

1. Elephants whose skin is not wrinkled, who are never sick, who are grand looking, do not run away from the battlefield, dislike meat, and prefer clean food at proper times, are said to be *Dew mizāj* (of a divine temper).
2. Such as possess all the good qualities of elephants, and are quick in learning, moving about the head, ears, trunk, forelegs, hind legs, and the tail, and do no one harm except they be ordered to do so, are *Gandharba mizāj* (angelic).
3. If irritable, of good appetite, fond of being in water, they are *Brāhmana mizāj* (of a Brahminical temper).
4. Such as are very strong, in good condition, fond of fighting, ungovernable, are said to have the temper of a *Khattrī* or warrior.
5. Those which are of a low stature, and forgetful, self-willed in their own work, and neglectful in that their master, fond of unclean food, and spiteful towards other elephants, are *Shudra mizāj*.
6. Elephants which remain hot for a long time, and are fond of playing tricks, or are destructive and lose the way, have the temper of a serpent.
7. Such as squint, and are slow to learn, or feign to be hot, have the temper of a *Pishācha* (spectre).
8. Those which are violent, swift, and do men harm, and are fond of running about at night, have the qualities of a *Rākchhas* (demon).

The Hindus have written many books in explanation of these various tempers, as also many treatises on the diseases of the elephants, their causes and proper remedies.

Elephants are found in the Sūbā of Agra, in the forests of Bayawan and Narwar, as far as Barar; in the Sūbā of Ilahabad (Allahabad), in the confines of Pannah (Bhath), Ghora and Ratanpur, Nandanpur, Sirguja, and Bastar; in the Sūbā of Malwa, in Handiyah, Uchhod, Chanderi, Santwas, Bijagarh, Raisin, Hoshangabad, Garha, Haryagarh; in the Sūbā of Bihar, in the neighbourhood of Rohtas and Jharkhand; and in the Sūbā of Bengal, in Orissa, and Satgaw. The elephants from Pannah are the best.

A herd of elephants is called in Hindi *sahn*. They vary in number; sometimes a herd amounts to a thousand elephants. Wild elephants are very cautious. In winter and summer, they select a proper place, and break down a whole forest near their sleeping place. For the sake of pleasure, or for food and drink, they often travel over great distances. On the journey one runs far in front of the other, like a sentinel; a young female is generally selected for this purpose. When they go to sleep they send out to the four sides of the sleeping place pickets of four female elephants, which relieve each other.

Elephants will lift up their young ones, for three or four days after their birth, with their backs, or lay them over their tusks. They also prepare medicines for the females when they are sick or in

labour pains and crowd round about them. When some of them get caught, the female elephants break through the nets, and pull down the elephant - drivers. And when a young elephant falls into a snare they hid themselves in an ambush, go at night to the place where the young one is, set it at liberty, and trample the hunters to death. Sometimes its mother slowly approaches alone, and frees it in some clever way. I have heard the following story from His Majesty: "Once a wild young one had fallen into a pit. As night had approached, we did not care to pull it out immediately, and left it; but when we came next morning near the place, we saw that some wild elephants had filled the pit with broken logs and grass, and thus pulled out the young one." Again, "Once a female elephant played us a trick. She feigned to be dead. We passed her, and went onwards; but when at night we returned, we saw no trace left of her".

There was once an elephant in the imperial stables named *Ayāz*. For some reason it had got offended with the driver, and was for ever watching for an opportunity. Once at night, it found him asleep. It got hold of a long piece of wood, managed to pull off with it the man's turban, seized him by the hair, and tore him asunder.

Many examples are on record of the extraordinary cleverness of elephants; in some cases it is difficult to believe them.

Kings have always shown a great predilection for this animal, and done everything in their power to collect a large number. Elephant-keepers are much esteemed, and a proper rank is assigned to such as have a special knowlege of the animal. Wicked, low men see in an elephant a means of lawlessness; and unprincipled evil-doers, with the help of this animal, carry on their nefarious trade. Hence kings of former times never succeeded in suppressing the rebellious and were thus disappointed in their best intentions. But His Majesty, though overwhelmed with other important matters, has been able, through God's assistance and his numerous elephants, to check those low but haughty men; he teaches them to desire submission, and bestows upon them, by wise laws, the blessings of peace.

His Majesty divided the imperial elephants into sections, which he put in charge of honest *Dāroghās*. Certain elephants were also declared *Khāṣa*, i.e., appointed for the exclusive use of His Majesty.

Āīn 42

THE CLASSIFICATION OF THE IMPERIAL ELEPHANTS

His Majesty made a sevenfold division, based upon experience:

1. *Mast* (full blood)
2. *Shérgīr* (tiger-seizing)
3. *Sādā* (plain)
4. *Manjholā* (middlemost)
5. *Karhā*
6. *Phandurkiyā*
7. *Mokal*

The first class comprises young elephants possessed of the peculiar heat which renders the animal so strong. The second class contains likewise young ones which once or twice have given signs of perfection and exhibit an uninterrupted alacrity. The third class comprehends useful elephants, which are nearly as good as the preceding. The fourth class contains elephants of a somewhat inferior value. Those of the fifth class are younger than those of the fourth. The elephants of the sixth class are smaller than those of the fifth. The last class contains all young ones still unfit for use.

Each class is divided into three sub-division, *viz.*, large-sized, middle, young ones; the last class contains ten kinds. A certain quantity of food has been fixed for each class.

Āīn 43

THE FOOD ALLOWED TO THE ELEPHANTS

Formerly the classification of the elephants was never attended to; hence in feeding them a large quantity of the stores was wasted. But when His Majesty, soon after lifting the veil, commenced to care for the happines of his subjects, this matter was properly inquired into, and wise regulations were issued for guidance.

1. *Mast* elephants - Large ones get daily 2 *mans* 24 *sérs*; middle-sized, 2 *m.* 19 *s.*; small ones, 2 *m.* 14 *s.*
2. *Shérgīrs* - Large ones, 2 *m.* 9 *s.*; middle-sized ones, 2*m.* 4 *s.*; small ones, 1 *m.* 39 *s.*
3. *Sādās* - Large ones, 1 *m.* 22 *s.*; middle-sized ones, 1 *m.* 29 *s.*; small ones 1 *m.* 24 *s.*;
4. *Manjholās* - Large ones, 1 *m.* 22 *s.*; middle-sized ones, 1 *m.* 20 *s.*; small ones 1 *m.* 18 *s.*
5. *Karhās* - Large ones, 1 *m.* 14 *s.*; middle-sized ones, 1 *m.* 9 *s.*; small ones, 1 *m.* 4 *s.*
6. *Phandurkiyās*-Large ones, 1 *m.*; middle-sized ones, 36 *s.*; small ones, 32 *s.*
7. *Mokals* - Large ones 26 *s.*; middle-sized ones, 24 *s.*; third class, 22 *s.*; fourth class, 20 *s.*; fifth class, 18 *s.*; sixth class, 16 *s.*; seventh class, 14 *s.*; eighth class, 12 *s.*; ninth class, 10 *s.*; tenth class, 8 *s.*

Female elephants have been divided into four class, viz., large ones, middle-sized ones, small ones, *mokals*. The first two classes are divided into three; the third, into four; the fourth, into nine sub-divisions.

1. Large ones- Big, 1 *m.* 22 *s.*; middling, 1 *m.* 18 *s.*; small ones, 1 *m.* 14 *s.*
2. Middle - sized ones - Big, 1 *m.* 10 *s.*; middling, 1 *m.* 6 *s.*; small 1 *m.* 2 *s.*
3. Small ones - Big, 37 *s.*; middling, 32 *s.*; small, 27 *s.*; still smaller, 22 *s.*
4. *Mokals*, First class, 22 *s.*; second, 20 *s.*; third, 18 *s.*; fourth, 16 *s.*; fifth, 14 *s.*; sixth, 12 *s.* seventh, 10 *s.*; eighth, 8 *s.*; ninth, 6 *s.*

Āīn 44

THE SERVANTS OF THE ELEPHANT STABLES

1. *Mast* elephants. There are five and a half servants for each, viz., a *mahāwat*, who sits on the neck of the animal and directs its movements. He must be acquainted with its good and bad properties, and thus contribute to its usefulness. He gets 200 *dāms* per month; but if the elephant be *khutahār*, *i.e.*, wicked and addicted to pulling down the driver, he gets 220 *d.* Secondly, a *bhoi*, who sits behind, upon the rump of the elephant, and assists in battle and in quickening the speed of the animal; but he often performs the duties of the *mahāwat*. His monthly pay is 110 *d.* Thirdly, the *meths*, of whom there are three and one-half, or only three in case of small elephants. A *meth* fetches fodder, and assists in caparisoning the elephant. *Meths* of all classes get on the march four *dāms* daily, and at other times three and a half.

2. For every *shérgīr*, there are five servants, *viz.*, a *mahāwat*, at 180 *d.; bhoi,* at 103 *d.*; and three *meths* as before.

3. For every *sādā*, there are four and a half servants, viz., a *mahāwat*, at 160 *d.*, a *bhoi*, at 90 *d.* and two and a half *meths.*

4. For every *manjholā*, there are four servants; *viz.*, a *mahāwat*, at 140 *d.*; a *bhoi*, at 80 *d.*, and two *meths.*

5. For every *karhā*, there are three and a half servants; viz., a *mahāwat,* at 120 *d.*; a *bhoi*, at 70 *d.*; and one and a half *meths.*

6. For every *phandurkiyā*, there are two servants; *viz.*, a *mahāwat*, at 100 *d.*; and a *meth.*

7. For every *mokal*, there are likewise two servants; *viz.*, a *mahāwat*, at 50 *d.*; and a *meth.*

Female Elephants:

1. Large ones have four servants, *viz.* a *mahāwat,* at 100 *d.*; a *bhoi,* at 60 *d.*, two *meths.*

2. Middle-sized ones have three and a half servants; *viz.*, a *mahāwat*, at 80 *d.*; a *bhoi*, at 50 *d.*; and one and a half *meths.*

3. Small ones have two; *viz.*, a *mahāwat*, at 60 *d.*; and a *meth.*

4. *Mokals* have likewise two; *viz.*, a *mahāwat*, at 60 *d.*; and a *meth.*

The Fawjdār

His Majesty has appointed a superintendent over troop of ten, twenty and thirty elephants. Such a troop is called a *halqā;* the superintendent is called *fawjdār*. His business is to look after the condition and the training of the elephants; he teaches them to be bold, and to stand firm at the sight of fire and at the noise of artillery: and he is responisble for their behaviour in these respects. When a *fawjdār* is raised to the dignity of a *sadī* (a commander of one hundred) or higher, he has twenty-five elephants assigned to himself, the other *fawjdārs*, as *bīstīs* (commanders of twenty)

and *dahbāshīs* (commanders of ten) being under his orders. The same order is followed from the *dahbāshīs* up to the *haẓārīs* (commanders of one thousand). The pay of officers above the *sadī* is different. Some *fawjdārs* have been raised to the dignity of grandees of the court. A *sadī* marks two horses. A *bīstī* of the first grade had 30 rupees per mensum; second grade, 25 R.; third grade, 20 R. A *dahbāshī* of the first grade has twenty R.; second grade 16 R.; third grade, 12 R. *Bīstīs* and *Dahbāshīs* mark one horse, and belong to the *Ahadīs*. Such *fawjdārs* as have thirty or twenty-five elephants assigned to themselves have to pay the wages of the *mahāwat* and of one *bhoi* of that elephant, which they select for their own use; but such as have twenty or ten only pay for a *mahāwat*.

The above arrangement regarding the servants was not thought sufficient by His Majesty, who has much experience in this matter. He, therefore, put several *halqās* in charge of every grandee, and required him to look after them. The fodder also is now supplied by the government. A trustworthy clerk has, besides, been appointed, who is in charge of the correspondence of this branch; he looks after the receipts and expenditure and sees that the orders of His Majesty are carried out. He also parades the elephants.

Āīn 45

THE HARNESS OF ELEPHANTS

1. The *dharna* is a large chain, made of iron, gold, or silver. It is made of sixty oval links, each weighing three *sérs;* but the chain differs in length and thickness according to the strength of the elephant. One end of the chain is fixed in the ground, or fastened to a pillar; the other end is tied to the left hind leg of the elephant. Formerly, they fastened this chain to the forefoot; but as this is injurious for the chest of the elephant His Majesty ordered to discontinue the usage.
2. The *andū* is a chain, with which both forefeet are tied. As it annoys the elephant, His Majesty ordered it to be discontinued.
3. The *berī* is a chain for fastening both hind feet.
4. The *baland* is a fetter for the hind feet, an invention of His Majesty. It allows the elephant to walk, but prevents him from running.
5. The *gaddh-berī* resembles the *andū*, and is an additional chain for the hind legs of unruly and swift elephants.
6. The *loh-langar* is a long chain, suitable for an elephant. One end is tied to the right fore foot, and the other end to a thick log, a yard in length. This the driver keeps near him, and drops it, when the elephant runs too swiftly, or gets so unruly as no longer to obey. The chain twists round his leg, and the log will annoy the animal to such extent that it necessarily stops. This useful invention, which has saved many lives, and protected huts and walls, is likewise due to His Majesty.
7. The *charkhī* is a piece of hollowed bamboo half a yard and two *tassūjes* long, and has a hole in the middle. It is covered with sinews and filled with gunpowder, an earthen partition dividing the powder into two halves. A fuzee wrapt in paper is put into each

end. Fixed into the hole of the bamboo at right angles is a stick, which serves as a handle. Upon fire being put to both ends, it turns round and makes a frightful noise. When elephants fight with each other, or are otherwise unruly, a bold man on foot takes the burning bamboo into his hand, and holds it before the animals, when they will get quiet. Formerly, in order to separate two elephants that were fighting, they used to light a fire; but people had much trouble, as it seldom had the desired effect. His Majesty invented the present method which was hailed by all.

8. *Andhiyārī*, i.e., darkness, a name which His Majesty changed into *ujyālī, i.e.*, light, is a piece of canvas above one and a half yards square. It is made of brocade, velvet, etc., and tied with two ends to the *kilāwā*. When the elephant is unruly, it is let fall, so that he cannot see. This has been the saving of many. As it often gives way, especially when the elephant is very wild, His Majesty had three bells attached to the ends of the canvas, to keep it better down. This completed the arrangement.

9. The *kilāwā* consists of a few twisted ropes, about one and half yards long. They are laid at the side of each other, without, however, being interwoven among themselves, the whole being about eight fingers broad. A ring is drawn through both ends of the ropes, and fastened where the throat of the elephant is; the elephant driver rests his feet in it, and thus sits firmly. Sometimes it is made of silk or leather. Others fix small pointed iron-spikes to the *kalāwā*, which will prevent an unruly elephant from throwing down the driver by shaking its head.

10. The *dulthī* is a rope, five yards long, as thick as a staff. This they tie over the *kalāwā* to strengthen it.

11. The *kanār* is a small pointed spike, half a yard long. This they likewise attach to the *kalāwā*, and prick the elephant's ears with it in order to make the animal wild or to urge it on.

12. The *dor* is a thick rope passing from the tail to the throat. When properly tied it is an ornament. They also catch hold of it, when the elephant makes an awkward movement. They also attach many other trappings to it.

13. The *gadelā* is a cushion put on the back of the elephant below the *dulthī*. It prevents galling, and is a source of comfort.

14. The *gudautī* is a chain of brass. They attach it near the tail, which it prevents from getting injured by the *dulthī*. It is also ornamental.

15. The *pichwā* is a belt made of ropes and is fastened over the buttocks of the elephant. It is a support for the *bhoi*, and of much use to him in firing.

16. The *chaurāsī* consists of a number of bells attached to a piece of broad cloth, which is tied on before and behind with a string passed through it. It looks ornamental and grand.

17. *Pitkachh* is the name of two chains fastened over the elephant's sides. Attached to them a bell hangs below the belly. It is of great beauty and grandeur.

18. Large chains. They attach six on both sides and three to the *kalāwā*, the latter being added by His Majesty.

19. *Qutās* (the tail of the Tibetan yak). There are about sixty, more or less, attached to the tusk, the forehead, the throat, and the neck. They are either white, or black, or pied, and look very ornamental.

20. The *tayyā* consists of five iron plates, each a span long, and four fingers broad, fastened to each other by rings. On both sides of the *tayyā* there are two chains, each a yard long, one of which passes from above the ear, and the other from below it to the *kalāwā*, to which both are attached. Between them there is another chain, which is passed over the head and tied to the *kalāwā*; and below, crossways, there are four iron spikes ending in a curve, and adorned with knobs. The *qutās* are attached here. At their lower end there are three chains similary arranged. Besides, four other chains are attached to the knob; two of them like the first, end in a knob, whilst the remaining two tied to the tusks. To this knob again three chains are attached, two of which are tied round about the trunk, the middle one hanging down. *Qutās* and daggers are attached to the former knobs, but the latter lies over the forehead. All this is partly for ornament, partly to frighten other animals.

21. The *pākhar* is like an armour, and is made of steel; there are separate pieces for the head and the trunk.

22. The *gaj-jhāmp* is a covering put as an ornament above the *pākhar*. It looks grand. It is made of three folds of canvas, put together and sewn, broad ribbon being attached to the outside.

23. The *mégh-dambar* is an awning to shade the elephant driver, an invention by His Majesty. It also looks ornamental.

24. The *ranpiyāl* is a fillet for the forehead made of brocade or similar stuffs, from the hem of which nice ribbons and *qutās* hang down.

25. The *gatélī* consists of four links joined together, with three above them, and two others over the latter. It is attached to the feet of the elephant. Its sound is very effective.

26. The *pāy-ranjan* consists of several bells similarly arranged.

27. The *aṅkusha* is a small hook. His Majesty calls it *gajbāga*. It is used for guiding the elephant and stopping him.

28. The *gad* is a spear which has two prongs instead of an iron point. The *bhoi* makes use of it when the elephant is refractory.

29. The *bāngrī* is a collection of rings made of iron or brass. The rings are put on the tusks, and serve to strengthen as well as to ornament them.

30. The *jagāwat* resembles the *gad* (No. 28), and is a cubit long. The *bhoi* uses it to quicken the speed of the elephant.

31. The *jhandā* or flag, is hung round with *qutās*, like a *togh*. It is fixed to the side of the elephant.

But it is impossible to describe all the ornamental trappings of elephants.

For each *mast* and *shérgīr* and *sādā*, seven pieces of cotton cloth are annually allowed, each at a price of 8-1/2 *dāms*. Also, four coarse woollen pieces, called in Hindi *kambal*, at 10 *d*. each, and eight ox hides, each at 8 *d*. For *manjholā* and *karhā* elephants, four of the first; three of the second; and seven of the third, are allowed. For *phandurkiyās* and *mokals,* and female elephants, three of the first; two of the second; four of the third. The saddle cloth is made of cloth, lining, and stuff for edging it round about; for sewing, half a *sér* of cotton thread is allowed. For every *man* of grain, the *halqā-dār* is allowed ten *sérs* of iron for chains, etc., at 2 *d*. per *sér*; and for every hide, one *sér* of sesame oil, at 60 *d*. per *man*. Also 5 *s*. coarse cotton thread for the *kalāwā* of the elephant on which the *fawjdār* rides, at 8 *d*. per *sér;* but for other elephants, the men have to make one of leather, etc., at their own expense.

A sum of twelve *dāms* is annually substracted from the servants; but they get the worn out articles.

Āīn 46

THE ELEPHANTS FOR HIS MAJESTY'S USE (KHĀṢA)

There are one hundred and one elephants selected for the use of His Majesty. Their allowance of food is the same in quantity as that of the other elephants, but differs in quality. Most of them also get 5 *s*. of sugar, 4 s. of *ghī,* and half a *man* of rice mixed with chillies, cloves, etc.; and some have one and a half *man* of milk in addition to their grain. In the sugarcane season, each elephant gets daily, for two months, 300 sugarcanes, more or less. His Majesty takes the place of the *mahāwat.*

Each elephant requires three *bhois* in the rutting season, and two, when cool. Their monthly wages vary from 120 to 400 *d*., and are fixed by His Majesty himself. For each elephant there are four *meths*. In the *halqās,* female elephants are but rarely told off to accompany big male ones; but for each *khāṣa* elephant there are three, and sometimes even more, appointed. First class big female elephants have two and one half *meths;* second class, two; third class, one and one-half; for the other classes as in the *halqās.*

As each *halqā* is in charge of one of the grandees, so is every *khāṣa* elephant put in charge of one of them. Likewise, for every ten *khāṣa* elephants, a professional man is appointed, who is called *dahaidār*. They draw, twelve, ten, and eight rupees per mensem. Besides, an active and honest superintendent is appointed for every ten elephants. He is called *nāqib* (watcher) and has to submit a daily report, when elephants eat little, or get a shortened allowance, or in cases of sickness, or when anything unusual happens. He marks a horse, and holds the rank of an *ahadī*. His Majesty also weekly dispatches some of the servants near him, in the proportion of one for every ten elephants, who inspect them and send in a report.

Āīn 47

THE MANNER OF RIDING KHĀṢA ELEPHANTS

His Majesty, the royal rider of the plain of auspiciousness, mounts on every kind of elephant,

from the first to the last class, making them, notwithstanding their almost supernatural strength, obedient to his command. His Majesty will put his foot on the tusks, and mount them, even when they are in the rutting season, and astonishes experienced people.

They also put comfortable turrets on the backs of swift-paced elephants, which serve as a travelling sleeping apartment. An elephant so caparisoned is always ready at the palace.

Whenever His Majesty mounts an elephant, a month's wages are given as a donation to the *bhois*. And when he has ridden ten elephants, the following donations are bestowed, *viz*., the near servant who has weekly to report on the elephants, receives a present; the former, 100 R.; the *dahāi*, 31 R.; the *nāqib*, 15 R.; the *mushrif* (writer), 7-1/2 R. Besides, the regal rewards given to them at times when they display a particular zeal or attentiveness, go beyond the reach of speech.

Each elephant has his match appointed for fighting; some are always ready at the palace, and engage when the order is given. When a fight is over, if the combatants were *khāsa* elephants, the *bhois* receive 250 *dāms* as a present; but if other elephants, the *bhois* get 200 *d.*

The *dahāīdār* of *khāsa* elephants receives one *dām* for every rupee paid as wages to the *bhois* and *meths*; the *mushrif* is entitled to 1/2; *d*., and the *nāqib* to 1/4. In the case of *halqā* elephants, the *sadīwāl*, the *dahbāshī*, and the *bīstī*, are entitled to 1 *d.* for every rupee; and the *mushrif* and the *nāqib* receive the allowance given for *khāsa* elephants.

Āīn 48

ON FINES

In order to prevent laziness and to ensure attentiveness, His Majesty, as for all other departments, has fixed a list of fines. On the death of a male or a female *khāsa* elephant, the *bhois* are fined three months' wages. If any part of the harness is lost, the *bhois* and *meths* are fined two-thirds of the value of the article; but in the case of a saddle cloth, the full price. When a female elephant dies from starvation, or through want of care, the *bhois* have to pay the cost price of the animal.

If a driver mixes drugs with the food of an elephant to make the animal hot, and it dies in consequence thereof, he is liable to capital punishment, or to have a hand cut off, or to be sold as a slave. If it was a *khāsa* elephant, the *bhois* lose three months' pay and are further suspended for one year.

Two experienced men are monthly dispatched to inquire into the fatness or leanness of the *khāsa* elephants. If elephants are found by them out of flesh to the extent of a quarter, according to the scale fixed by the *Pāgosht* Regulation, the grandees in charge are fined, and the *bhois* are likewise liable to lose a month's wages. In the case of the *halqā* elephants, *ahadīs* are told off to examine them, and submit a report to His Majesty. If part of an elephant's tusk is broken, and the injury reaches as far as the *kalī*- this is a place at the root of the tusks, which on being injured is apt to fester, when the tusks get hollow and become useless - a fine amounting to one-eighth of the price of the elephant is exacted, the *dāroghā* paying two- thirds, and the *fawjdār* one-third. Should the injury not reach as far as the *kalī*, the fine is only one-half of the former, but the proportions

are the same. But, at present, a fine of one percent has become ususal; in the case of *khāṣa* elephant, however, such punishment is inflicted as His Majesty may please to direct.

Āīn 49

THE IMPERIAL HORSE STABLES

His Majesty is very fond of horses, because he believes them to be of great importance in the three branches of the government, and for expeditions of conquest, and because he sees in them a means of avoiding much inconvenience.

Merchants bring to court good horses from Iraq-Arab and Iraq-i-Ajam, from Turkey, Turkestan, Badakhashan, Sirwan, Qirghiz, Tibet, Kashmir and other countries. Droves after droves arrive from Turan and Iran, and there are now a days twelve thousand in the stables of His Majesty. And in like manner, as they are continually coming in so there are others daily going out as present, or for other purposes.

Skilful, experienced men have paid much attention to the breeding of this sensible animal, many of whose habits resemble those of man; and after a short time Hindustan ranked higher in this respect than Arabia, whilst many Indian horses cannot be distinguished from Arabs or from the Iraqi breed. There are fine horses bred in every part of the country; but those of Cachh excel, being equal to Arabs. It is said that a long time ago an Arab ship was wrecked and driven to the shore of Cachh; and that it had seven choice horses, from which, according to the general belief, the breed of that country originated. In the Panjab, horses are bred resembling Iraqis, especially between the Indus and the Bahat (Jhelum); they go by the name of *sanujī;* so also in the district of Pati Haybatpur, Bajwaral, Tiharas, in the Sūbā of Agra, Mewat, and in the Sūbā of Akmir, where the horses have the name of *pachwariyā*. In the northern mountainous district of Hindustan, a kind of small but strong horse is bred which are called *gut*; and in the confine of Bengal, near Kuch (Bahar), another kind of horses occurs, which rank between the *gut* and Turkish horses, and are called *tanghan;* they are strong and powerful.

His Majesty, from the light of his insight and wisdom, makes himself acquainted with the minutest details and with the classification and the condition of every kind of article; he looks to the requirements of the times, and designs proper regulations. Hence he also pays much attention to everything that is connected with this animal, which is of so great an importance for the government and an almost supernatural means for the attainment of personal greatness.

First, he has set apart a place for horse-dealers, where they may, without delay, find convenient quarters, and be secure from the hardships of the seasons. By this arrangement, the animals will not suffer from that hardness and avariciousness so often observed in dealers of the present time; nor will they pass from the hands of well-intentioned merchants into those of others. But dealers who are known for their uprightness and humanity may keep their horses where they please, and bring them at an appointed time. Secondly, he appointed a circumspect man to the office of an *Amīn-i-karwansarā* who from his superior knowledge and experience keeps the dealers from the path of disobedience and ties the mischievous tongues of such as are wicked and evasive. Thirdly, he has appointed a clever writer, who keeps a roll of horses that arrive and have been

mustered, and who sees that the orders of His Majesty do not fall into abeyance. Fourthly, he has appointed trustworthy men acquainted with the prices of horses to examine the animals; and to fix their price, in the order in which they are imported. His Majesty, from his goodness, generally gives half as much again above the price fixed by them, and does not keep them waiting for their money.

APPENDIX IX

ARMOURED HORSE DURING JAHĀNGĪR

Jahāngīr (ruled 1605-1627 A.D.) enjoyed giving and accepting presents of elephants and horses. In the year 1605 A.D. when Jahāngīr ascended the throne, he presented to Rājā Mān Singh a *chārqāb,* a robe of honour, a jewelled sword and one of his own horses[1]. The same year Abdur-Rahīm (son of Abul Fazl), Mahā Singh (grandson of Rājā Mān Singh) and a few others were exalted to the rank of 2000 and each one obtained robes of honour and horses[2]. In 1605 itself Jahāngīr made Ziyā-ud-dīn, who had done him service in the days of his princehood and shown loyalty, commander of 1000 and accountant of stables. An order was given that every day thirty horses should be produced before the Emperor for the purpose of making presents[3].

About Prince Dāniyāl, Jahāngīr writes that he was very fond of elephants and horses and it was impossible for him to hear of anyone as having a good horse or elephant and not take it from him[4]. He writes that his father Akbar had a number of fighting elephants and armoured Arab horses. He narrates the incident how during his (Akbar's) Gujarat expedition Akbar led the army and crossed a river on his caparisoned horse[5].

It had been the custom that when the gift of an elephant or horse was made to anyone, the *nāqibs* and the Master of the Horses *(Mir-i-ākhurān)* took from him a sum of money as *julāwanā* (bridle-money)[6]. Jahāngīr gave orders in 1605 A.D. that this money should be paid by the Government[7].

In 1607 A.D., Jahāngīr visited the tomb of Bābur at Kabul and there he organised a horse race. He ordered to bring his race-horses *(aspān-i-dawanda)* and arranged a race. The princes and the *amīrs* raced them. A bay Arab horse which Abdul Khān, the ruler of the Deccan, had sent to him, ran better than all the other horses[8]. The same year Jahāngīr presented to Shāh Bég Khān Khān-daurān with a jewelled waist-dagger, a male elephant and a special horse. In 1609 A.D. the Emperor bestowed upon Khān Jahān a robe of honour, money and a special horse[9]. Another special horse was given to Prince Parwiz and the same year he gifted an Iraqi horse to Rājā Kalyān[10]. In the seventh regnal year (1612 A.D.) he presented the Khān-Khānā with a grand dress of honour, a jewelled dagger, a special elephant with *talayir* (accoutrements) and a caparisoned Iraqi horse[11]. The same year Jahāngīr appointed Mirzā Rustam as the Governor or Patna and bestowed upon him a superb dress of honour, an ornamented sword, a special elephant and a horse with a jewelled saddle[12].

In July, 1614 A.D., Rājā Mān Singh expired. Jahāngīr, in order to console Mahā Singh, the grandson, gave as an *inām* (present) the territory of Garhā (modern Jabalpur) and sent him a jewelled dagger belt, a horse and a dress of honour[13]. In 1615 A.D. Jagat Singh, son of Kunwar

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About Prince Dāniyāl, Jahāngīr writes that he was very fond of elephants and horses and it was impossible for him to hear of anyone as having a good horse or elephant and not take it from him[4]. He writes that his father Akbar had a number of fighting elephants and armoured Arab horses. He narrates the incident how during his (Akbar's) Gujarat expedition Akbar led the army and crossed a river on his caparisoned horse[5].

It had been the custom that when the gift of an elephant or horse was made to anyone, the *nāqibs* and the Master of the Horses *(Mir-i-ākhurān)* took from him a sum of money as *julāwanā* (bridle-money)[6]. Jahāngīr gave orders in 1605 A.D. that this money should be paid by the Government[7].

In 1607 A.D., Jahāngīr visited the tomb of Bābur at Kabul and there he organised a horse race. He ordered to bring his race-horses *(aspān-i-dawanda)* and arranged a race. The princes and the *amīrs* raced them. A bay Arab horse which Abdul Khān, the ruler of the Deccan, had sent to him, ran better than all the other horses[8]. The same year Jahāngīr presented to Shāh Bég Khān Khān-daurān with a jewelled waist-dagger, a male elephant and a special horse. In 1609 A.D. the Emperor bestowed upon Khān Jahān a robe of honour, money and a special horse[9]. Another special horse was given to Prince Parwiz and the same year he gifted an Iraqi horse to Rājā Kalyān[10]. In the seventh regnal year (1612 A.D.) he presented the Khān-Khānā with a grand dress of honour, a jewelled dagger, a special elephant with *talayir* (accoutrements) and a caparisoned Iraqi horse[11]. The same year Jahāngīr appointed Mirzā Rustam as the Governor or Patna and bestowed upon him a superb dress of honour, an ornamented sword, a special elephant and a horse with a jewelled saddle[12].

In July, 1614 A.D., Rājā Mān Singh expired. Jahāngīr, in order to console Mahā Singh, the grandson, gave as an *inām* (present) the territory of Garhā (modern Jabalpur) and sent him a jewelled dagger belt, a horse and a dress of honour[13]. In 1615 A.D. Jagat Singh, son of Kunwar

Karan, was presented with 20000 rupees, a caparisoned horse, an elephant, a dress of honour and a special shawl[14]. Same year the Mughal army defeated Malik Amber of Deccan and the whole of Deccan's artillery with 300 laden camels that carried rockets, war-elephants, Arab and Persian horses, weapons and armour (both for men and animals) beyond reckoning fell into the hands of the Mughals[15].

In the eleventh regnal year (1616 A.D.) Muqarrab Khān was made the Governor of Ahmedabad, his *mansab* was raised and he was honoured with *nādirī* (a special dress of honour), a *taghmā* (badge or medal), a special elephant, a sword studded with precious stones and two caparisoned horses from the private stable of the Emperor[16]. In the same year Dilāwar Khān came from Pattan which was his father's fief and presented a 'Kachhī' horse to Jahāngīr. The Emperor says, "till I came to Gujarat no one had presented me with so fine a horse. Its value was 1000 rupees"[17]. When Jahāngīr reached Gujarat the same year he was surprised to see that Jām Sāhéb, the ruler of Jam Nagar, named 'Jassā' ('Jām' was his title), had maintained a strong cavalry of 6000 horses, all 'Kachhī ' origin[18]. The same year Bahādur Khān, the Governor of Qandhar, had sent seven Iraqi horses and nine *tuquz* of cloth stuff[19]. Again on the 5th *Urdibihisht,* 30 Iraqi and Turki horses that Murtazā Khān had sent from Lahore were brought before Jahāngīr as also 63 horses, 15 camels 9 male and female), a bundle of *kulang's* (crane's) plumes, nine veined fish-teeth (*shermāhī* or walrus ivory) and 3 guns from Khān Daurān, which he had sent from Kabul, were accepted by the Emperor[20]. In 1616 A.D. itself at the time of marriage of Kunwar Karan, the Emperor conferred on him a dress of honour, an elephant, a jewelled waist-dagger and a special Iraqi horse with a saddle[21]. It was again in the same year that Emperor gave the province of Jaisalmer to Rāwal Kalyān as *tankhwāh* in addition to the gift of an armoured horse, an elephant, a jewelled sword, a jewelled *khapwā,* a robe of honour and a special Kashmiri shawl[22]. A few days later on Friday, the 20th *Aban,* Jahāngīr conferred the title of 'Shāh Sultān' upon his son Khurram (later Shāh Jahān) and presented him with a robe of honour, a jewelled *chārqāb,* the fringe and collar of which were decorated with pearls, an Iraqi horse with a jewelled saddle, a Turki horse, a special elephant called 'Bansī-badan' (i.e., with body like Krishna or like the flute of Krishna) a carriage according to the English fashion for him to sit and travel about, a jewelled sword with a special *paradala* (sword-belt) that had been taken at the conquest of the fort of Ahmednagar and was very celebrated, and a jewelled dagger[23].

A number of other persons were presented with caparisoned horse in 1616 A.D. as recorded by Jahāngīr in his autobiography e.g., the Emperor honoured Sayyid Abdullā with the title of Saif Khān and exalted him with a dress of honour, an armoured horse, an elephant and a jewelled dagger[24]. He appointed Udā Rām to service in the Sūbā of Deccan and conferred on him a dress of honour, an elephant and several Iraqi horses and sent with him for the Commander-in-chief Khān Khānā, the Atāliq, a special dagger damascened in pure gold *(zarnishān)*[25]. On Thursday, the 4th of *Isfandarmuz* the presents of Muqarrab Khān of Malwa were laid before Jahāngīr. There was nothing rare among them. Jahāngīr accepted decorated vessels to the value of a lakh. Also about one hundred 'Kachhī' horses were taken but there was none of the great excellence[26]. Muhammad Husain Sabzāk, who had been sent to Balkh to buy horses, came to court in the same year and brought a number of horses - one of which was piebald and was of a fine shape and colour. Jahāngīr had never seen a piebald horse of that colour before[27].

In 1618 A.D. Mīr Muhammad Amīn Khān, the caravan leader, brought *tipūchak* horses from Iraq. These were so fine that some of them were put in Jahāngīr's private stables. The same year Jahāngīr conferred upon the Jām, among other things, two horses, one from Iraq and other a Turki[28]. A special 'Kachhī' horse, one of the good horses of the Jām which had been presented to Jahāngīr, was given by Jahāngīr to Rājā Bīr Singh Dev[29]. On Saturday, the 6th *Mihr* (1618 A.D.) the Dussehrā festival took place. First they decked out royal horses and paraded them before Jahāngīr after that produced the elephants decorated in a similar way[30]. The same year Jahāngīr camped on the bank of Sind on his way to capture the fort of Ranathambhore and arranged a wine feast. In that he gave a special horse of the name of 'Sumer', which was one of the finest war-horses of Khān Khānā. Later again the Emperor bestowed the *pustin* (sheep-skin coat) he had on his own person and seven horses from his stable, on which the Emperor always rode, were also given to him[31].

On Sunday , the 8th *Bahman* (1618 A.D.) Kunwar Karan, son of Rānā Amar Sigh, was presented with a horse, an elephant, a dress of honour, a jewelled *khapwā* and a *phūl kaṭāra*[32] and in the same year Jahāngīr conferred upon jagat Singh, the *mansabdār* of Bengal, a jewelled *khapwā*, a robe of honour, a caparisoned horse and an elephant[33].

On Thursday, the 12th *Shahriwar* (1620 A.D.) Mīr Mīran was appointed the *faujdār* of Mewat and was given a special horse with a dress of honour and a sword[34]. In the same year a special horse of the name of 'Musāhib' (Companion) was given to Abdullāh Khān Abdus-Salām who arrived from Orissa[35].

In 1621 A. D. Jahāngīr sent to Khurram, as a present, an armoured horse of the name of 'Rum Ratan (the Jewel of Turkey) which the ruler of Persia had sent to Jahāngīr out of the spoils of the Turkish camp[36].

In 1622 A.D. Jahāngīr appointed Irādat Khān the governor of Kashmir and bestowed on him a caparisoned horse, a dress of honour and a special enemy-piercing *(arinas)* sword[37].

The cavalry was called *aimaqs*[38]. In the 12th regnal year (1617 A.D.) Jahāngīr ordered that the two-horsed and three- horsed cavalry of one Diwān be changed into one-horsed cavalry[39]. In 1617 A.D. Rājā Kalyān presented a number of items to Jahāngīr among which was a gold figure of a horse studded with jewels[40].

During this period the mounted archers were being replaced by the matchlockmen. In the 17th regnal year 2500 well-horsed cavalry was enrolled of whom 400 were marchlockmen[41].

References

1. *Tuzuk-i-Jahāngīrī*, translated into English by Alexander Rogers and edited by Henry Beveridge, vols. 1 and 2 in one format, originally published 1909-1914, reprinted, third edition (New Delhi, 1978), pp. 15-16. All the subsequent references are from the third edition (reprinted) book.
2. *Ibid.*, p.17
3. *Ibid.*, p. 25.
4. *Ibid.*, p. 36.
5. *Ibid.*, p. 37.

6. This was one of Akbar's regulations. The amount was ten *dām* on each *muhar* of the horse's value, calculated on an increase of 50 per cent. *vide, Āin-i-Akbarī* translated into English by H.Blochmann, reprinted (New Delhi, 1965), p. 142.

7. *Tuzuk-i-Jahāngīrī*, (tr.), *op. cit.*, p. 46.

8. *Ibid.*, vol. I, p. 110.

9. *Ibid.*, vol. I, p. 128.

10. *Ibid.*, vol. I, p. 162.

11. *Ibid.*, vol. I, p. 222.

12. *Ibid.*, vol. I, p. 229. In the tenth regnal year Mahābat Khān was appointed the Governor of Deccan and was presented with a jewelled dagger *(phūl kaṭāra)*, a special *nādirī* (dress) and an ambling horse with a saddle. Altogether 3000 armoured war-horses together with war-elephants and artillery were sent with Mahabāt Khān and an amount of Rs. 30 lakhs was sanctioned for their expenses on the way (*Ibid.*, vol. I, p. 299).

13. *Ibid.*, vol. I, p. 266.

14. *Ibid.*, vol. I, pp. 310-311.

15. *Ibid.*, vol. I, p. 314.

16. *Ibid.*, vol. I, p. 334. Jahāngīr has described a strange custom which he says was prevalent with the Hindus at that time. He says "If the movement of kings or the great men for the conquest of a country is towards the east they should ride a tusked elephant and if the movement is towards the west, on a horse of one colour, if towards the north, in a palanquin or a litter *(singhāsan)* and if towards the south on a *rath* which is a kind of cart *(arābā)* or *bahal* (two-wheeled cart) (*Ibid.*,, vol. I, p. 340).

17. *Ibid.*, vol. I, p. 439.

18. *Ibid.*, vol. I, p. 443.

19. *Ibid.*, vol. I, p. 319.

20. *Ibid.*, vol. I, pp. 322-23.

21. *Ibid.*, vol. I, p. 324.

22. *Ibid.*, vol. I, p. 334.

23. *Ibid.*, vol. I, pp. 338-9. In 1616 A.D. itself Shāh Khurram, the then Prince, presented to the Rānā of Udaipur a dress of honour, a *chārqāb*, a jewelled sword, a jewelled *khapwā*, Persian and Turki horses and an elephant (*ibid.*, vol. I, p. 345).

24. *Ibid.*, vol. I, p. 382.

25. *Ibid.*, vol. I, pp. 409-410. The same year Prince Khurram went to Burhanpur where Bhārjiv, the *mansabdāra* of Deccan, brought eleven elephants as an offering. Prince Khurram presented to him, in return, a jewelled sword, an elephant, an armoured horse and a dress of honour. Later jahāngīr conferred upon him three rings of jacinth *(yākūt)*, diamond and ruby (*Ibid.*, vol. I, p. 396).

26. *Ibid.*, vol. I, p. 435. As the chief way of riding among the people of Gujarat was in bullock carts, Jahāngīr also wished to travel in a cart. He sat for two *kos* (4 miles) in a cart but was much troubled with the dust and after this till the end of the stage rode on horseback (*ibid.*, vol. I, p. 415).

27. *Ibid.*, vol. I, p. 444.

28. *Ibid.*, vol. II, pp. 2-3.
29. *Ibid.*, vol. II, p. 12.
30. *Ibid.*, vol. II, p. 38.
31. *Ibid.*, vol. II, pp. 58,77
32. *Ibid.*, vol. II, p. 70.
33. *Ibid.*, vol. II, p. 166.
34. *Ibid.*, vol.,II, p. 166.
35. *Ibid.*, vol. II, p. 197.
36. *Ibid.*, vol. II, p. 209.
37. *Ibid.*, vol. II, p. 238.
38. *Ibid.*, vol. I, p. 61.
39. *Ibid.*,, vol. I, p. 421.
40. *Ibid.*, vol. I, p. 390.
41. *Ibid.*, vol. II, p. 231. The mounted archers and foot archers lost their vacation when guns came in use. Most of them became cavalry soldiers. Such archers have been called *tarkash-bandān* or quiver-holders.

APPENDIX X

ARMOURED ELEPHANTS IN TUZUK-I-JAHĀNGĪRĪ

Jahāngīr (1605-1627 A.D.) enjoyed giving and accepting elephants as presents. There are several occasions recorded in the *Tuzuk-i-Jahāngīrī*[1] when elephants were gifted.

Dāniyāl[2] was very fond of elephants and horses. It was impossible for him to hear of anyone having a good elephant or horse and not to take it from him[3]. About Akbar Jahāngīr once mentioned that he had innumerable fighting elephants and Arab horses[4]. Akbar was so bold and courageous that he could mount raging, rutting elephants and subdue to obedience murderous elephants which would not allow their own female near them[5]. Hemū, who fought against Akbar in Pānīpat in 1556 A.D., had a stud of elephants such as no ruler of Hindustan had at that time[6].

It was a custom that when the gift of an elephant or horse was made to anyone, the *Nāqibs* and the Masters of the Horse (*Mīr Ākhurān)* took from him a sum of money as *jilāwanā* (bridle-money)[7]. Jahāngīr ordered that in future this money will be paid by the Government[8].

Jahāngīr was so fond of elephants that once he saw a huge white rock in river-bed. He ordered that the rock may be carved in the form of an elephant and engraved with the words "This white stone elephant of Jahāngīr Pādshāh that is 1016"[9].

In 1608 A.D. Jahāngīr ordered Mahābat Khān to crush the Rānā of Mewār. Two thousand musketeers on foot, with artillery made up of 70 to 80 guns mounted on elephants and camels and 60 war-elephants, were alloted for this job[10].

In 1616 A.D. Muqarrab Khān presented to Jahāngīr a small elephant from Abyssinia which had been brought by sea in a ship[11].

In 1616 A.D. Kunwar Karan was presented with an armoured elephant along with many other items[12]. Same year a jewelled dagger and an elephant were bestowed upon Rāwal of Jaisalmer[13]. Again in the same year an elephant was given to Muhammad Rizā Bég, the ambassador of the ruler of Persia[14].

In 1617 A.D. Prem Nārāyan, Rājā of Gadehā, presented seven elephants, male and female, to Jahāngīr[15]. The same year Shāh Jehān presented many items including horses and elephants adorned with gold and silver trappings[16]. Three elephants with gold trappings and nine with silver trappings were presented by Ādil Khān to Jahāngīr in the same year (1617 A.D.).

Jahāngīr had been arranging fights of bold men with that of the elephant[17]. He even ordered to provide lukewarm water for elephants' bath during winter[18].

SPECIAL ELEPHANTS

On the death of Dāniyāl, some of the horses and elephants belonging to him were produced before Jahāngīr. Of the elephants, one male named 'Mast Alast' was the best and Jahāngīr renamed him 'Nūr Gaj'. It had a very broad forehead and was a very imposing animal[19].

In 1606 A.D. Ratan, son of Bhojhara, a Rājput noble, brought an elephant which was valued at Rs. 15,000/-. It was named 'Ratangaj'[20]. Same year Rājā Mān Singh was ordered to leave for Deccan. Jahāngīr gave him, among others, his personal male elephant called 'Hushyārmast'[21].

In 1610 A.D. Kishwar Khān was presented with a private elephant called 'Bakht-jit'.[22]. The same year an elephant called 'Ālam-gumān' was entrusted to Habibullāh for Rājā Mān Singh[23].

Jahāngīr has described in detail the fight between Usmān, the rebel, riding on a raging elephant named 'Gajpat'[24] and Shājat Khān, Jahāngīr's general, on an armoured horse. In 1613 A.D., an elephant called 'Bansī Badan'[25], which Islam Khān had sent from Bengal, was brought to Jahāngīr and put among his special elephants. The same year Bābā Khurram (later Shāh Jahān) was presented with an elephant named 'Fatéh Gaj'[26] with trappings and many jewelled arms.

In 1614 A.D., Jahāngīr sent his private elephant named 'Rūp Sundar' to his son Parwiz[27]. In 1615 A.D. Rājā Sūraj Singh brought a large and rare elephant of the name 'Ran-rawāt'[28]. It was one of the wonders of the age. Same year, Khurram was given 'Panchī Gaj'[29] with the accoutrements of the value of 12000 rupees. A few days later Rājā Sūraj Singh presented Jahāngīr with another elephant called 'Fauj-singār'[30] (Ornament of the army). An elephant 'Ranjīt' with trappings was given to Mirzā Rustam by Jahāngīr in the same year.

'Gajrāj,[31] a celebrated war-elephant, was presented to Rānā Amar Singh in 1617 A.D. This was earlier sent to Jahāngīr by Ādil Khān as an offering. Same year an elephant called 'Jagjot' was conferred on Itimādud-daulāh, the Mughal Governor of Panjab. The next day Jahāngīr Alī Qulī Khān sent an elephant 'Ran-bādal'[32](Cloud of war) for Jahāngīr, the Emperor. A few days later Ādil Khān presented 'Sarnāk' (like snake-hood) elephant along with a casket of precious stones. This was a very fine elephant and it stood all the tests in size, form and beauty. Jahāngīr himself drove it and took it to his private stud and renamed it as 'Nūr-bakht' (Light of fortune').[33] The price of this elephant was Rs. 1,25,000. The other elephant 'Mahipati' (offered by Ādil Khān) was valued at Rs. 1,00,000. It was renamed 'Durjansāl' by the Emperor. Another, also from Ādil Khān's offerings, was 'Bakht-buland' and valued at Rs. 1,00,000. Jahāngīr renamed it 'Giran-bar'. One elephant was 'Qaddus Khān' and another was 'Imān Rizā', both these were offered by Qutab-ul-Mulk and were valued at Rs. 1,00,000 each.[34]

In 1617 A.D., Jahāngīr mounted 'Sūrat-gaj',[35] his favourite elephant, perfect in disposition and appearance, in Ahmedabad. The same year Jahāngīr gave 'Sundar Mathan'[36] to Shān Jahān. It was very beautiful to look at and in speed competed with horses. It was, in fact, the personal elephant of Akbar. Complete trappings of gold were also conferred upon Shān Jahān.

In 1618 A.d., two elephants were captured in Jāmnagar (Gujarat) in an elephant hunt and were named 'Ravan Sar' and 'Pavan Sar'.[37] The same year elephant 'Sundar Khās' along with three females was made to test a bridge made by Khwājā Abu Hasan, the Chief Bakhshī. Next year an armoured elephant named 'Subh-dam'[38] (Breath of morn) was given to Abu Hasan and he was ordered to proceed to Deccan.

References

1. *Tuzuk-i-Jahāngīrī tr.* by A. Rodger. vol I, p.36, etc.
2. Dāniyāl was the son of Akbar born to one of the concubines.
3. *Tuzuk-i-Jahāngīrī, op.cit.,* vol.I, p.36.
4. *Ibid.,* p.37
5. *Ibid.*, p.38. Akbar, according to Jahāngīr, would place himself on a wall or tree near which an elephant was passing that had killed its *mahāut* and broken loose from restraint, and would throw himself on its back and bring it under control.
6. *Ibid.,* p. 39. On the day of the battle (Thursday, *Muharram* 2nd, A.H. 964 *i.e.,* 5th November, 1556 A.D.). Hemū was riding on an elephant named 'Hawāī' when an arrow struck him at the eye and came out at the back of the head. He was arrested and beheaded.
7. This was one of Akbar's regulations (*vide*, Blochmann, *Āin-i-Akbarī* (tr.), p.142). The amount was ten *dām* on each *muhar* of the horse's value calculated on the increase of 50 per cent.
8. *Tuzuk-i-Jahāngīrī, op. cit.*, p. 46.
9. *Ibid.*, pp.103-4.
10. *Ibid.* Two million rupees were sanctioned for this army.
11. It is slightly different from the elephants of India. Its ears, tail and trunk were longer than the Indian counterparts. One African elephant was presented by Itimād Khān of Gujarat to Akbar before Jahāngīr was born.
12. *Ibid.*, p. 324.
13. *Ibid.,* p. 328.
14. *Ibid.*, p.343.
15. *Ibid.*, p. 379.
16. *Ibid.*, p. 339.
17. *Ibid.,* p. 339.
18. *Ibid.*, p. 410.
19. *Ibid.*, p. 46.
20. *Ibid.*, p. 140. In 1621 A.D. it was presented by the Emperor to Khān Jahān.
21. *Ibid.*, p. 148.
22. In India Office Library manuscript it is *Takht-i-bakht* (Throne of fortune).

23. *Ibid.*, p. 170.

24. *Ibid.*, p.211. Shājat Khān first struck the elephant with his spear, then with his sword and finally with his dagger but of no avail. Instead the ifuriated beast overthrew Shājat Khān with his horse. It was with great difficulty that 'Gajpat' was brought under control.

25. *Ibid.*, p. 237. Later in 1616 A.D. this elephant was presented to Shāh Khurram along with a jewelled sword with a special *paradala* (sword-belt) and a jewelled dagger.

26. *Ibid.*, p. 256. A jewelled sword, a jewelled *khapwā* (dagger), *phūl kaṭāra* (dagger), *gaba* (coat) of gold brocade, a brocaded turban with strings of pearls, were some other items presented by Jahāngīr.

27. *Ibid.*, p. 261.

28. *Ibid.*, p. 287. It was such a celebrated animal that Jahāngīr put it into his private stud.

29. In the British Museum manuscript it is 'Panch Kunjar' *i.e.*, 'equal to five elephants'.

30. Though it was also a good elephant and had been included in the private stud of the Emperor, it cannot be compared with the earlier elephant 'Ran-rawāt' which was worth Rs. 20,000.

31. *Ibid.*, p. 382.

32. *Ibid.*, p. 384.

33. *Ibid.*, p. 394. A quantity of gold coins were scattered on the head of the elephant which were later distributed among the *mahāuts*. This elephant was ordered to be tied up inside the royal palace. Second time Jahāngīr rode it in a hunting expedition and shot a blue bull. Third time he rode it and made to chase a horse. 'Nūr-bakht' every time proved his worth. There were twenty elephants in the private stud of the Emperor, and of which five were very larger and celebrated and 'Nūr-bakht' was the foremost. In the elephant stable of Akbar, the largest elephant was 'Durjansāl'. Its height was 4 yards and 3-1/2 quarters of the *Illāhī gaz*, which was eight yards and three fingers of the ordinary *gaz*. In Jahāngīr's stable the largest elephant was 'Ālam-Gajrāj' which Akbar himself had caught. Its height was 4.1/8 *Illāhī* yards or 7 yards and 7 fingers of the ordinary yard. (*Ibid.*, vol. II,p.18).

34. *Ibid.*, p. 400.

35. *Ibid.*, p. 423. At the same time Amānat Khān, one of the generals, presented two elephant tusks to the Emperor. They were very large, one of them being 3 cubits, 8 *tassu* (finger-breadth) in length and 16 *tassu* in circumference. It weighed 3 *mands* and two *seers* or 24-1/2 Iraqi *mands*.

36. *Ibid.*, p. 432.

37. *Ibid.*, vol.II, p.5.

38. *ibid.*, p. 193. The name of the personal elephant of Parwiz was 'Kūh-daman'. Once in 1619 A.D. Jahāngīr mounted a special elephant called 'Dilir' and he himself drove it.

GLOSSARY

Abbāsī, A curved sword.

Absad, Cheek-piece of a helmet.

Absar, Leather shield

Adagā, A shield or parrying weapon of Arabic origin. The name is derived from Arabic *el-darakah* meaning 'a shield'.

Afghan Knife, A dagger having a straight heavy, single-edged blade tapering to a point.

Āftābgīr, A royal ensign.

Āftāb-i-Ālam, One of Aurangzeb's shields meaning 'Sun of the World'.

Ahadī, Cavalry troops in imperial establishments.

Ailettes, Cavalry trooper in imperial establishments.

Aiātul Kursī, 'Poem of Throne' from the Holy *Qurān.*

Akbar-nāmā, Written by Abul Fazl Allāmī, Akbar's official chronicler and biographer.

Aketon, Heavily padded garment worn under the hauberk of mail, also called 'wambais' or 'action'.

Akhtāchis, An officer over horses.

Ālam, A royal standard.

Amal, Manufacturer or artisan.

Amud, Winged or flanged mace.

Anazah, Short infantry spear.

Anf, Nasal of the helmet.

Aṅkusha, Elephant-goad.

Aṅkushadhara, The holder of elephant-goad, also called *mahāut* (elephant driver)

Arābā, Gun-carriages or baggage-carts employed by Bābur at the battle of Pānīpat in 1526 A.D.

Arabesque, Decoration in colour or low relief with fanciful interlinking of leaves; scroll work.

Arad, Blade of a spear; a pole arm.

Archer's Ring, A ring worn on the thumb of the left hand to protect it from the pressure and friction of the string of the bow.

Arciones, The high peaks, front and back, of the war saddle. They were sometimes covered with steel plates which were beautifully decorated.

Armed, Armoured knight or a soldier carrying arms.

Armet, A kind of a closed helmet that conforms to the shape of the head and covers it completely.

Arming Doublet, A padded garment worn under armour to protect the person from blows, strains and chafing.

Arming Girdle, The sword belt worn over the armour.

Arming Points, Spurs worn with armour.

Arm Knife, A small knife carried on the left arm near the shoulder with a loop.

Armour, Defensive covering for the body worn in fighting.

Armourer, Manufacturer of armour.

Armoury, Place where arms and armour are kept; arsenal.

Artak-i-kājem, Horse armour; a quilted trapper for a horse usually forming a foundation for one of mail.

Assad Ullāh, The most celebrated of Persian swordsmiths.

Atbegī, Master of the horses during Mughal period.

Aug, The arrow for shooting the birds.

Aventail, Movable front piece of helmet made like a transparent veil.

Bābur, The word means 'panther' in Turki language.

Bachinet or *Basinet,* A light helmet.

Back and Breast, A kind of body armour.

Badge, A device to distinguish the followers of a king or a chieftain. It was the origin of armorial insignia and coat of arms.

Bājūband or *Bāzūband,* A plate defence for the forearm with or without an extension for the head.

Bakhtar-zillo, Scale armour.

Bālātang, Surcingle of silk for horse.

Baldric, Collar or shoulder-belt worn as a support for a sword or simply as an ornament.

Ballam, A short spear with a broad head.

Baltū, Battle-axe.

Banded Mail, A variety of mail showing alternate rows of links and solid discs.

Bandolier, A baldric or waist-belt.

Banner, A flag hung from a horizontal pole attached to a staff.

Barachhā, Cavalry lance completely of metal.

Barding, Armour for horses.

Batkha-kalaghī, Crest of the helmet fitted with heron feathers, also called *bagta kalagī.*

Baṭmān, A Turkish weight of 13 to 15 pounds. This refers to the strength demanded for rounding the bow. It refers to draw-weight.

Baydah, Egg-shaped helmet.

Bedough, A mystic symbol with a square divided into four parts, containing even numbers.

Belt Sword, A sword with such a flexible blade that it could be worn as a belt.

Bhanju, A defensive coat with a gorget (throat guard) attached; also called *bhanjee.*

Bichāq, A dagger with a straight single-edged blade and a straight handle made of two plates of ivory riveted to the flat tang.

Bit, A bar put inside the horse's mouth in order to control it.

Black Armour, The armour that was blackened or painted to prevent it from rusting.

Boss, A projection from the flat or (nearly flat) surface on the central part of a shield.

Bracer, Archer's guard or a covering for the left wrist to protect it from the recoil of the bowstring.

Brassard, Plate armour for the entire arm.

Breaststrap, A broad strap crossing a horse's chest and fastened to the saddle.

Bridle, A device to control the horse. It consists of headstall, bit and rein.

Brigandine, Suit of fabric or leather fitted with metal plates and gilt studs.

Buckler, A shield with handle (or two close together) in the centre and held in the hand.

Bukhtar, A solid breastplate.

Burk, Mughal cap.

Burnishing, In this process the miniature painting, after it was well finished, was laid face down on a hard smooth surface and then firmly rubbed with an agate or jade.

Butted, The rings (or links) of the armour not riveted but only brought together.

Calthorp or *Caltrap,* Spikes planted in the ground to prevent the advance of the cavalry.

Camail, A guard of mail for the sides, neck and the shoulders.

Cantle, The rear peak of a saddle.

Caparisoned, Horse's trappings, equipment or outfit.

Cavalier, Horse-soldiers; an armed horseman.

Cavalry, Horse-soldiers; cavaliers.

Cavalry Helmet, Helmet composed of mail and plates and preferred by the cavaliers.

Chamchāq, A battle-axe fastened to a saddle.

Chamfron, A defence for a horse's head; frontlet.

Chape, A metal tip that strengthens the end of the sheath or the termination of a belt or a girdle. In heraldry it is called 'crampet'.

Chapras, Literally brooch or buckle. Another name for *goshā-gīr.*

Chār-āinā, 'Four mirrors'. The name given to the Indo-Persian (or Perso-Indian) cuirass consisting of circular or rectangular plates secured round the body with straps or hinges.

Charkha, Crossbow.

Chār-qāb, A square shawl of cloth of gold bestowed as a mark of rank and distinction.

Chasing, Decoration work done with a tool or weapon on the front surface of the metal part; embossing; engraving.

Chauss, Defences from knee to foot, made of mail.

Chaussons, Armour for the upper part of legs or thighs.

Cheek-flaps, Same as 'cheek-pieces'.

Cheek-pieces, Metallic plates hung from the sides of the helmet to protect the ears and the side of the face.

Chern, Decorations in black on silver or other light metal. It is much used in Caucasus where it is called *niello.*

Chickāk, A Turkish helmet.

Chihaltā, 'Forty-fold coat'; a fabric coat of many layers worn by soldiers. See also *chiltāh.*

Chilānum, a dagger with a doubly curved, double-edged blade.

Chiltāh, A corrupt form of *chihaltā.*

Chiltā Hazār Māshā, 'Coat of thousand nails', a coat of many layers of fabric faced with velvet

and studded with thousands of small gilt nails arranged in pattern,

Chirwā, A small Mughal shield.

Chiselling, Trimming; to cut to shape with a chisel tool.

Chobdār, Mace-bearer.

Chhurā, A knife or a dagger, the smaller ones were called *chhurī.*

Coat Armour, Any military garment with the armorial ensign of the wearer embroidered on it.

Coats of arm, Symbols of knights on their armour.

Coat of mail, Any mail garment that covers the body, strictly one that opens down the front.

Coif, Mail hood.

Crest, The ornament surmounting a helmet; *kalaghī.*

Cresting, The ornamentation of arrows.

Crinet, Armour for the upper side of a horse's neck.

Crupper, Armour for hind quarters of a horse.

Cuella, Armour for the under side of a horse's back.

Cuirass, A defence for the body, originally of leather as the name implies but now applicable to any kind of body armour.

Cuirassier, Horse soldiers wearing cuirass.

Curibouilli, The armour made of boiled leather.

Cuisses, Defences for thigh.

Curb, Bit.

Cushion, Mass of soft material stuffed into cloth or silk covering.

Dagger, A general name for all kinds of knives usually worn at waist or hip.

Damascening, Decorating a metal by inlaying; an art of encrusting one metal on the other.

Damascus, The capital of Syria famous for its special steel blades hence Damascus steel.

Daraka, A shield usually made of hide. See also *tūr* or *tūrā.*

Daraqāh, A small, convex leather buckler.

Dastānā or *Dastānāh,* Arm guard; plate defences for the fore arm with or without extension for the back of the hand.

Delhīshāhī, A variant of hilt consisting of disc pommel, oval grip, short and stubby quillons and

triangular langets.

Dhābdār, Shield maker.

Dhāl, A general name for a shield, buckler, target, etc.

Dhāl-baftā, A shield made of fifty folds of silk.

Dhūp, A sword having a broad, straight, long, double-edged blade and a padded basket hilt.

Dirk, A dagger or short sword.

Dīvān, A collection of poems written by Bābur and sent to Pulād Sultān in 1519.

Dodhārā, Double-edged sword or dagger.

Doublet, Close fitting body garment worn by men, with or without sleeves and short skirts.

Dumchī, Crupper (for horse) of leather covered with velvet and small metal bosses.

Ear-flaps, Ear-guards; parts of a helmet for the defences of the ears.

Elephant-goad, The instrument with which to guide, goad or drive the elephant; *aṅkusha.*

Embossing, A style of decoration. It is changing the relative levels of different parts of a piece. It can be done by raising some part or sinking the other.

Enamelling, Glass-like opaque or semi-transparent coating on metallic surface for ornaments; *mīnākārī.*

Enames, Loops on the back of shield through which the arm is passed.

Ensign, Originally it included all flags, banners, standards, guidons, pennons, pencils and banderolls. Now it signifies the national flag carried on a vessel.

*Eaul de Mouto*n, A large curved guard worn over the regular armour to protect the right arm in tournaments, as elbow guard protects the left.

Epaultettes, Shoulder-cop also called 'epaulets', 'epauliers' and 'pollets'.

Espallieres, Shoulder guards.

Eye, In archery it refers to the loop spliced on the bowstring.

Fabric armour, Quilted or the defensive covering made of fabric.

False edge, In single-edged swords a few inches of the back near the point is frequently sharpened to make them more effective for thrusting. This portion is known as 'false edge'.

Filigree, Ornamental work of a fine gold or a silver or copper wire formed into delicate tracery.

Finger-guard, The portion of a sword that protects the fingers from a cross - cut. It is formed by recurving the quillons towards the pommel or by connecting the two (quillons and pommel) by a plate, a bar, etc. In its elaborate form it becomes a basket hilt.

Flag, A flag is hung directly from a vertical staff while a banner is fastened to a cross-bar hung from the staff.

Flanchard. A defence for a horse's flank generally suspended from the saddle; plate armour for horse's side.

Flight, Feathers for arrows.

Foible, The part of the blade near the point of the sword.

Foining weapons, Thrusting weapons.

Foliage, Representation in art as leaves excluding petals and flowers, etc., foliate; foliar; leafage.

Forte, The part of the sword nearest the hilt.

Frond, Leaf-like decoration formed by union of stem and foliage; leaves and stems but not flowers.

Frontal, Armour for a horse's head.

Gad, An implement used to goad an elephant.

Gajbāga, A variant of elephant-goad.

Gardanī, Armour for horse's neck.

Gauntlet, Armour for the hand.

Gauntlet sword, The Marāthā *paṭṭā* sword, the hilt of which is gauntlet.

Gerrhes, A Persian shield.

Ghagrī, Rattle of metal tied on the legs of the horse.

Gharīchā, A variety of coat.

Ghāsiyā, A saddle cloth popular in Bokhara.

Ghughwāh, A mail coat with a hood permanently attached.

Ghurcharhes, Armoured Sikh cavalry.

Gig or *Gigue*, A sling for a shield.

Gilding, Covering with thin layer of gold or silver laid on as gold leaf; *mulammā.*

Girth, The band or strap holding a saddle in place.

Glancing knob, Large bosses on the poitrel of a horse to deflect lance thrusts, also called 'bossoirs' or 'pezoneras'.

Godhā, A leather bracer worn by bowman.

Goshā-gīr, An instrument used to straighten the middle portion of the bow.

Greaves, Leg armour which covered from the knee to the ankle.

Guige, A strap with which the shield was hung through the shoulder and neck.

Gulūband, Strips of velvet flowers with silk for mane.

Guptī, Concealed weapon.

Guptī-kard, It was a knife for thrusting. It was kept in a sheath and had a gauntlet.

Gurz, A mace with steel spikes fitted on the globular head.

Harness, Working equipments of horse or other animals; defensive armour.

Hāshiyā, Borders. The miniatures of the *Bābur-nāmā* are without borders, though most Mughal miniature paintings have beautiful margins.

Hauberk, Skirt or coat reaching to the feet and with long sleeves, worn over the gambeson; a kind of overcoat.

Headstall, A part of bridle.

Helm, Armour for the head; same as helmet.

Helmet, Head covering or armour for the head, *shirastrāṇā.*

Hide, Animal skin, raw or dressed.

Holster, A case fastened to the belt or saddle in which to carry a pistol or other small weapons.

Horn Armour, Armour made of horn.

Horse Furniture, The equipments of a horse; harness, trappings and armour.

Howdāh or *Hawdāh,* The wooden saddle placed upon the back of an elephant; an elephant housing.

Humāyun-nāmā, A chronicle of family affairs written by Gulbadan Begam (daughter of Bābur) in 1587 A.D.

Imbricate, Same as 'scale armour'.

Inlay or *Inlaying,* To glue or paste one metal or another.

Jagāwat, An implement used in goading an elephant.

Jaghnol, It had a steel handle with a head shaped like the beak of a bird.

Jāmā, A long shirt or coat of cotton worn usually over the armour or as a sole defence.

Jamadhar, A typical Indian thrusting dagger with H-shaped handle and a sharp, pointed, triangular blade.

Jauhar, The watering of the blade.

Jaushan, Coat of mail.

Javelin, A throwing spear.

Jazerant, Armour made of strips of horn, leather or metal fastened to cloth or leather; same as *jajerant.*

Jibā, A quilted coat worn beneath a mail shirt or as the sole body defence; also called a *jibbāh.*

Joshan, A kind of Mughal breastplate.

Jūnāh, Shield made of laminated wood and covered with leather; also called *jūnān, amijann, mohinn* and *jūnāh.*

Kājem, Horse armour of mail, see *artak-i-kājem.*

Kalaghī, Ornament surmounting a helmet; same as crest.

Kamar-band, Waist-belt.

Kameha, A Turkish whip.

Kamr, Belt carrying flasks.

Kaṇṭha-shobhā, A gorget; armour for the neck and throat.

Kaṇṭop, Close-fitting helmet of one piece.

Kard, A straight-bladed dagger with a straight hilt and no guard.

Kardang, A varient of *goshā-gīr.*

Kārkhānās, Workshops, studios.

Karud, A straight-bladed *peshquabz.*

Karwā, Mantlet of raw hide, stuffed on both sides with wool or cotton.

Kashkā, A chamfron or horse helmet, same as *qasqāh.*

Kāwnas, A tall conical helmet.

Kazaghand, A mail shirt covered and lined with fabric.

Khazghad, Cane shields used by the Seljuk Turks.

Khāndā, A sword having broad, straight blade widening toward the point.

Khanjar, A slightly curved, double-edged dagger.

Khapwāh, A dagger with a curved double-edged blade with a strong rib.

Khār-i-māhī, It consisted of several steel spikes projecting on both sides of a straight handle.

Khatt-i-Bāburī, A new style of writing introduced by Bābur.

Khawdhā, A helm

Kherā, A round Mughal shield.

Khogīr, Saddle; red velvet.

Khud, One piece Indo-Persian (or Perso-Indian) helmet also called *khod, khudh, k̀huddāh Islāmiā.*

Khukari or *Kukrī,* The Gurkhā sword.

Khyber Knife, See Afghan knife.

Kilij, The Indo-Turkish sword.

Kimkhāb, Indian brocade, also spelt as *kincob, kimkob,* etc.; brocade used extensively for lining armour.

Kindjal, A straight-bladed dagger with a groove.

Kirk Narduban, The 'forty steps' in allusion to the transverse markings of fine grey or black watering.

Knee Guard, Armour generally for horse's knee.

Knee Shield, Knee cop or shield to protect the knee.

Knife, A common weapon with many varieties.

Knob, Rounded protuberance on the surface of shield.

Koḍā, Whip.

Koftgārī, The decoration of iron with patterns in gold and silver either inlaid or overlaid commonly called 'false damascening'.

Korāzin, A Turkish cuirass of plates connected with mail.

Khulah-khud, A helmet.

Kulah-zirah, Indo-Persian helmet entirely of mail connected with small plates.

Lacquering, Gold coloured varnish of shellac dissolved in alcohol used as coating on shield or other objects.

Lagām,, Rein.

Lagseam, A Moghul bit.

Lamallac, Thin plate, scale, layer, splint or film of bone or metal.

Lamellar Armour, Armour constructed with small rectangular plates, each pierced with a regular series of holes and laced into horizontal rows with leather thongs or cords, the rows or laminations thus created then being connected to each other with vertical laces.

Laminations, Strips of metal or other strong material connected by various means to permit freedom of movement to body or limbs.

Lāzimdik, A stiff bow.

Lining, Layer of different materials inside a garment, shield, armour, etc.

Lip, The edge of the shield curved upwards.

Mace, A helmet breaking weapon. It had a globular head and a short handle.

Mādū, Marathā parrying shield fastened with a pair of horns.

Mahāut, Elephant driver.

Mahtāb-i-Ālam, One of Aurangzeb's shields meaning 'moon of the world'.

Mail, A defence constructed of rings or links of wire. The most usual construction for this defence is the one made with circular rings, each one passing through four others, the joints being riveted, welded or butted after linking up.

Malfuzāt-i-Timūrī, Autobiography of Timurlane (1336-1405 A.D.).

Mantlet, Large shield supported from the ground and used as defence in attacking fortified places.

Mārū, Same as *mādū;* also see *singautā.*

Matchlock, A gun with lock in which match is placed for igniting powder; also called *torédār bandūk.*

Mighfar, A segmented coif of mail.

Mihmaz, Spurs

Missiourkā, A shallow Turkish skull-cap of iron with long pendent mail defence for head and neck for wear over a cap and head-cloth. Although of Turkshi origin it was more popular in Eastern Europe.

Mozā-i-ahnī, Iron socks covering the foot and foreleg.

Muhnāl, Upper fitting of the sheath.

Munjaniqs, Instrument used in siege warfare.

Musket, Infantry soldier's hand gun.

Musketeer, Soldiers armed with musket.

Myāngar, Sheath-maker

Napthā or *Naft,* Fire-arrows used by Arab invaders in India.

Naqārkhānā, Kettle-drum house.

Narasingh Moth, A kind of dagger referred to in the *Āin-i-Akbarī.*

Narm-dik, Easy bow.

Nasal, A nose-guard in the form of a strip or bar attached to the helmet.

Neck Guard, Upright plates on the shoulder-guard for the defence of the neck.

Nocks, In archery the notches for the string are called nocks.

Nose Guard, same as nasal.

Ondanigue, Name of the Indian steel referred to by Marco Polo. It is also called *andanicune* and *andaine.*

Ozan, A Persian helmet.

Padak, Ornament of metal for the neck of the horse.

Padding, The lining inside the armour.

Pahrī, A Mughal shield of cane or bamboo; also called *phārī.*

Pākhar, Elephant armour.

Parrying Shield, Shield used for thrusting; see *mādū.*

Pāṭṭā, A Marāthā gauntlet sword.

Perforated Shield, Shield having opening for the user to see the enemy without being exposed.

Peshqabj, A dagger having T-sectioned straight blade, wider near the hilt and without a pommel or a guard.

Phārī or *Pahrī,* A cane shield of Mughal period.

Pinnacle, Small ornamental turret ending in pyramid or cone; natural peak; climax.

Pistol, A hand fire-arm used with one hand.

Pistol Shield, Shield fitted with a pistol.

Piyazī, Rugged mace; a club shaped like an onion.

Plate Armour, Armour made of steel plates as distinguished from mail, scale, brigandine or *jazerant* armour.

Plume, Feathers used to decorate a helmet.

Plume-holder, A tube fixed on the helmet to hold a plume.

Poitrel, The armour for horse's chest.

Pommel, The knob on the end of the sword or dagger or on the butt of a pistol. It was named from the resemblace of many to an apple; the front peak of a saddle.

Purdāh, Aventail

Qabak-i-Maidān, A shooting range for archers.

Qarā Khurāssān, The watered steel, nearly black, with fine undulations proceeding like water.

Qarā Tabān, The watered steel, brilliant black or more grey in tone with larger watering.

Qashqāh, Frontlet for the horse.

Qawāns, Crest of a helmet.

Qilich, Sword.

Qirbān, Bow-case exclusively for bows.

Quaddārā, A broad sword like a long *kindjal.*

Qur, The wapons for the personal use of the Emperor.

Qur-khānāh, The imperial department which manufactured arms and armour for the Mughal emperors and their army.

Rāq, Leg armour made of small plates of iron and chains.

Rein Guard, Hinge plates fastened to the reins of a bridle as a defence.

Ricasso, The squared part of a sword blade, next to the hilt, sometimes enclosed by the *pas d'ane.*

Riqāb, Iron stirrups; also called *rikāb.*

Rivet, Naiḷ or bolt for holding together metal plates, etc. Its headless end being beaten out after passing through two holes.

Roshanī-i-Ālam, One of Aurangzeb's shields meaning 'light of the world'.

Saddle, Rider's seat placed on the back of the horse.

Saghdāq, Mughal quiver (*Bābur-nāmā*).

Saif, A broad-bladed sword with a peculiarly hooked pommel, South India.

Sāk, A variant of spear. It has a small leaf-shaped pointed blade with two globular balls immediately below it.

Sāyā-i-Ālam, One of Aurangzeb's shields meaning 'shadow of the world'.

Sāz, Bridle with neck and breast-straps.

Scale Armour, A defence constructed with small plates of metal, hide, horn or wood, secured by one edge to a foundation of leather or fabric placed in horizontal rows overlapping each other both sideways and downwards and usually imbricated like the tiles of a roof or the scales of a fish.

Sefin, Archer's ring.

Selārā, It was like a *barachhā* with a grip in the centre from where it was held.

Sbabraque, A housing or saddle cloth for a cavalry horse.

Shagreen, Leather of ass.

Shāh-nāmā, Book written by Firdausī.

Shām, Simple Damascus watering.

Shamshīr, Strongly curved sword of watered steel blade. The hilt is simple and light with a single cross-guard and a pommel projecting at one side.

Shashbur, Same as *shash-par,* a mace with six flanges on it.

Shast or *Shast-ā-wez,* Thumb shield used on the left hand in archery.

Shield, Variously shaped and sized detached pieces of armour made of leather, wood or metal and worn on left arm to receive thrust or stroke of weapons.

Shikarband, Game-strap; bunches of string covered with velvet to be fastened to the corners of saddle.

Shīrmāhī, Walrus ivory.

Siklīgar, Armourer.

Silehkhānā, An armoury.

Sipar, Persian name for a shield.

Sipar-i-chakh, Large infantry shield used during siege.

Sipar-i-karg, Shield of rhinoceros (*gaindā*) hide.

Skin, Hide of flayed animal with or without the hair.

Solret, Plate armour for the feet.

Sosun-paṭṭā, A sword having the blade like a 'lily leaf'.

Spike, The surmounting part of a helmet.

Splinted Armour, Armour made of splints or narrow plates riveted together.

Spur, Pricking instrument with point or rowel worn on horsemen's heel.

Stirrup, Rider's foot-rest usually consisting of iron loop with flattened base hung by a strap.

Tabaqāt-i-Bāburī, A Persian text written during Bābur's time by his secretary Shaikh Zain-ud-dīn of Khawāf.

Tabar, Battle-axe consisting of a curved blade with a broad cutting edge.

Tabar-jaghnol, A combination of *tabar* (battle-axe) with *jaghnol* (beak-shaped head) on the opposite side.

Tabar-zin, Saddle hatchet.

Tahnishān, True damascening; also called *tehnishān.*

Tail-piece, An arched plate riveted to the crupper of horse armour; also called 'tail guard'.

Talwār, A curved sword with a typical Indian hilt which has short, heavy quillons and disc or mushroom-shaped pommel.

Tang, The part of the edged weapon that is inserted in the handle.

Tarkash-band, Quiver-bearers.

Tarkash-bīla, quiverful.

Tawachiyān, Mace-bearers.

Teghā, A sword with a broad curved blade and a hilt like that of a *talwār.*

Tehnāl, Chape

Tehnishān, True damascening.

Tilwā, A cavalry shield of the Mughal period.

Tipūchāq, A variety of horse.

Top, A helmet whether a single mail hood, one of mail and plates or of one piece of iron.

Trapper of Mail, Mail armour for a horse.

Tugh, Banner.

Tulghumā, A mode of fighting adopted by Bābūr in the battle of Pānīpat and Khānwā. Literally it means 'turning parties'.

Tunic, A short linen shirt reaching to just above the knee.

Umbo, A central boss on a shield to give room for the hand.

Umbril, A movable brim projecting over the eyes from the front of a helmet.

Unarmed, A warrior without any armour. A soldier equipped with any number of weapons was not 'armed' unless wearing armour.

Ushnīsha, A turban.

Ustad Kabīr, A celebrated gunmaker and armourer of the court of Akbar.

Vambrace, An armour to protect the fore-arm. When first introduced in Europe in the 14th century A.D. they only covered the forearm from wrist to elbow.

Varnishing, Applying resinous solution to wood, metal, etc., to give hard, shiny, transparent surface.

Velvet, Closely woven fabric wholly or partly of silk with thick short pile on one side.

Visor, The piece attached to the helmet to protect the face. It originated by joining the ear-flaps and the nasal and was fixed. Later the name was applied to movable piece as well.

Waist-band, Band round waist from which belt or petticoats, etc., might be suspended.

Waist-coat Armour, A cuirass made of three or four pieces hinged together; a body armour.

Wākiāt-i-Bāburī, Autobiography of Zahīr-ud-dīn Muhammad Bābur also called *Bābur-nāmā* (History of Bābur).

Wootz, Damascus steel: Indian watered steel.

Yakbandī, A sword-belt with slings for the sword and a hook to hang it from, when on foot.

Yasiqilich, Broad sword.

Yātāghan, A slightly curved Turkish sabre, also popular with the Mughals, without quillons, often elaborately decorated with silver, brass, coral, etc.

Zafar-nāmā, Book written by Sharaf-ud-dīn Yazdī.

Zafar-takiyā, A short sword with crutch-shaped pommel.

Zahīrud-dīn-Muhammed, It means 'Defender or Faith' in Arabic language.

Zarnishān, True damascening.

Zerband, Martingale of red silk net.

Zīn, Saddle.

Zirih Bakhtar, A mail coat or shirt; also called *zirih bakhtar* or *zirah bukhtar.*

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INDEX

A

Accoutrement, horse, 25, fgs. 21-25

Afghan Knife, fg.135

Aftaphqere, 31

Ahadī, 27, 201, 204

Ākhur-bāk, 25

Ain-i-Akbarī, horse, 17, chanfron, 47, horse armour, 202-212, Ajantā, horse, 21, fg, 17, *sirduālī*, 57, elephant - goad, 193, bit, 57

Akbar, saddle, 71

Akhtachī, 202

Alexander, cavalry, 19

Ambārī, 111, *imarī*, 111-2, fig. 81

Amīr-i-Ākhur, 25

Amir Khusrau, on horsemen, 21

Andhiyārī, 113

Andhu,, 103

Aṇī, 57, bit, 57-8, fgs. 16, 17

Animal armour, Taxila, 191 ff, Bābur's horse, 27, *Āin-i-Akbarī*, 201-227

Aṅkusha, 195, Taxila, 192, with peacock feathers, 192, *aṅkushadhara*, 91, fg. 78

Arabia, horse, 21

Archery, 123, Ghurid, 123, mounted, 29, ring, 133, horse, 121, 123, fgs. 89, 90

Arm-guard, 176, *dastānā*, 176, fgs. 208-212

Armour, fabric, 1, scale, 3, splint, 5, damascening, 9, golden, 17, horse, 27, breast and back, 161, fgs.185-200

Armourer, 3, 7

Armoured, bullock, 1, elephant, 106-117, fgs. 82-6, coat, 161, warrior, fgs. 202-3, horse, 29-35, fgs. 22-26, cavalry, 13, mail, 7, plate, 7, ornamentation, 9

Arrian, Hydaspes battle, 19

Arrow 125, types, 127, fgs. 95-114, serrated, 122, fgs. 91-94, inscribed, 127, fire, 127, Poisoned, 127, puller, 127, arrow-head extractor, 127, bag, 93

Art of handling elephants, 89, 90

Artak, 200, *artak-i-kāzem*, 48, fg. 31;50 fg. 34;52 fg. 36,60 fgs 50-52, 61

Artillery, 27

Ashvaka, 21, *ashvapa*, 15

Ashvasādin, 15, *ashvamédha*, 89

Ashwashāstra, 21

Ātash-bāzi, 95, rocket, 95, *taksha-andāz*, 95, *radandāz*, 95.

Atbégī, 203, *daroghā*, 203

Aurangzeb, elephant, 109, *howdāh*, 109

Axe, 147, *tabar*, 147, battleaxe, 147, fgs. 162-6, bridle-cutter, 59, fgs. 46-8

B

Bābur-nāmā, arms, 8, fg. 9, horse, 25, 26, elephant, 96, presentation of war-elephants, 96

Baby *howdāh*, 111

Bahrī horse, 23

Bājuband, 176, fgs. 208-211, *dastānā*, 176

Balabandha, 61, tail-band, 61, fgs. 54-55

Bālātang, 47

Ballam, 145, spear, 145, lance, 145, *pindī ballam*, 145, pike, 146 fg. 143

Bamboo, scale, 5

Banaras Vidya Mandir Museum, 6, fg. 7

Bandshafed, 199, *kamar-zarīn*, 199

Bānk, 155, fgs 169, 170

Barachhā, 145, javelin, 145, spear, 145

Bārgīr, 205, *bārgīrsuwār*, 205

Battleaxe, 147, fgs. 162-6

Battering ram, 95

Beḍī, 105 fg. 77, *berī*, 105

Bhālā, 145, *barachhā*, 145, javelin, 145, pike, 145, fg. 160

Bhiṇdipāla, 90, mace, 90

Bhuj 155, fgs. 171-2

Bit, 57, *aṇi*, 57, fgs. 16, 17

Bow, 121, on coins, 121, horse-bowman, 123, fgs. 89-90

Bobbin, 9, damascening, 9

Bosses of shield, 161, shield-bearer, 161

Boston Museum, 77

Bracer, 133

Branding, horses, 203

Breast-band, 35, strap, 51, fg. 39; 54, fg. 45

Bridle, 51-56, fgs. 35, 38, 39, 40, 42

Brokers of horse, 25

Bugḥdī, 207

Bukhtar, 161, *chār-āiṅā*, 161, *sadarī*, 161

Bullock, armoured, 1

Butted, rings, 7, links 7

C

Caltrop, 197, 198

Camail, 161, fgs. 185, 186

Camel, 207, 209, fg. 231

Cane *howdāh*, 111

Cannon, 27, artillery, 27

Cantle, 75, fg. 57

Caparisoned horse, 15, animal, 1, Ajantā 21, fgs. 16, 17

Cavalier, armoured, 28, Mongol, 18, fg. 24

Cavalry, 21, heavy, 21, 195, Delhi Sultanate, 21, feats, 17 *Rāmāyaṇa*, 17, Vedic, 15, prehistoric, 13, Kauṭilya, 187-9

Chafing, 59, 115, of armour, 1

Chain mail, 3

Chandā, 105, 110, fg. 87

Chāmara, 49, 59

Chanfron, 49,51 fgs. 32,33

Chape, 135, fg. 120

Chapel, 176, fg. 199

Chapras, 133, *gosha-gīr,* 133

Chār-āinā, 161, fgs. 11-12

Chariot, 15, charioteer, 17

Chārjāmā, 111

Chār-qāb, 71

Chaukhandīdāra, 111, bells attached to a cloth, 111

Chaurāsī, 105

Cheek-bar, 192, ivory, 193, bone, 193

Cheek ring, 192

Cherma tool, 9

Chevron, 190

Chhatrīdār, 111

Chiltā hazār māshā, 4, fg. 5

Chiselling, 11

Chugā, 147, fgs. 47,140, *zaghnol,* 147

Classification, horses, 21, horse furniture, 47

Club, 147, *gurz,* 147, *piyāzī,* 147, fgs. 146-151

Coat of mail, 161, *zirah kurtā,* 161

Coat, of thousand nails, 4, fg. 5, of pangolin scales, 6, fg. 6

Coins, saddle, 69

Colt, 187, stallions, 187

Combined armour, 7, fabric and metal, 9

Composition, lamellar, 5, scale, 5

Convex bow, 123

Conical helmet, 161, fgs. 186, 189

Coat of armour, 3

Crescent-shaped arrow-head, 128, fg. 101

Crinet, 51, fgs. 35, 36, *gardanī,* 51

Criniers, 51, crinet, 51

Crupper, 59, fgs. 41, 54, 55, *dumchī,* 59

Cuello, 51, fg. 31

Cuisses, 173, fgs. 220-1

Curb, 51, bit, 51, fg. 44

Curved hook, 192, elephant-goad, 192

D

Dagger, 135, 145, fgs. 123-128

Daimābād elephant, 87

Damascus steel, 133, watered steel, 133

Damascening, 9, fg. 12

Danta kavacha, 113, fg.80

Dantin, 90

Dāroghā, 203

Dastānā, 176, fgs. 209-212

Defects, scale armour, 5

Delhi Sultanate, horse, 21, elephant, 95

Demi-frontlet, 49

Desert warfare, 1

Development of armoured horse, 15 ff.

Dharna, 105

Dīdāwar, 204

Divine elephant, 89, *Airāwata,* 89, *Bhādra,* 89, *Mandara,* 89, *Mahāpadma,* 89

Dīwān-i-Āziz, 200

Donations of horse, 207

Drilling of plate, 9

Droṇa, 17

Dumchī, 59, fgs. 54-55, crupper, 59

Durability of armour, 9

E

Ear-and-neck-flaps, 4, fg. 5

Ekapundarīka, 89

Elephantry, through the age, 87 ff, role, 87, Vedas, 87 *Rāmāyaṇa*, 89, Kauṭilya, 9, Bābur, 96

Elephant, armour, 102, *howdāh*, 107, *imarī*, 111, tusk protector, 113

Elephant-goad, 195, Taxila, 192

Elephant-tamer, 93

Embellished, elephant, 90, fg.76

Embossing, 11

Embroidered, *howdāh*, 107, saddle, 77

Enamelling, 11

Encrusting, gold wire, 9, silver wire, 9

Enema for horse, 186

Engraving, 11

Equipped knight, 13, horse-archer, 21, 23

Etching, 11

Evolution of animal armour, 1

F

Fabric armour, 1, type, 1

Factories, of arms, 199, *kārkhānā*, 199-200

Farrāsh, 205

Farrier, 204, *nālaband*, 204

Fastening, of buttons, 6, fg. 6

Feathers, 125, fg. 107

Feats of cavalry, 17

Features, horse, 186

Filigree, 11

Fine for horse injury, 206

Firakī, 111, fg. 80

Fire-arms, 147, 161 fgs. 176-183

Flanchard, 59

Flaps, ear-and-neck, 4, fg. 5

Flexibilty of scale armour, 5

Flintlock, 147, fgs. 181-2

Flywhisk, 163, fg. 191

Foal, 202

Food, for camel, 209. for horse, 201

Foot, archers, 121, armour, 176, fgs. 225-6, soldier, 35

Forehead protector, 113

Forms of jumping, 186

Frontale, 49, fgs. 32-33, chanfron, 49, *qashqā,* 49

Furniture, horse, 1, elephant 1

G

Gad, 105

Gadā, 147, fgs. 146-151

Gaddh-berī, 105

Gajagāha, 105,111

Gajnāl, 147, elephant gun, 147

Gajratan, elephant, 96, Sarnāk, 96

Gallop, 187

Galtanī, 135

Gāndhāra art, 107

Gāndīva, 90

Gardanī, 22, fgs. 18, 20

Gatelī, 105

Gauntlet hilt, 135, *paṭṭā*, 135

Ghurid archers, 121

Gilding, 9

Girth, 105, harness of elephant, 105

Glancing knob, 61, piotrel, 61

Globular-headed *gadā*, 147, fgs. 146-151

Godhā, 133, bracer, 133

Golden armour, 17,

Gokharū, 197-8, caltrop, 197

Gosha-gīr, 133

Gradation of horses, 25

Groom, 204, *sāis*, 204, *zīndār*, 204

Gunpowder flask, 160, fg. 184

Gupta coins, 21, horsemen, 21

Gut horse, 202, *khāsa*, 202

H

Haḍā, 204

Haidar Ali, *howdāh*, 109

Haikala, 92, fg. 76

Halter, 27

Hammering, 7

Harness, 1, 45, 202, war steed, 13, *Āin-i-Akbarī*, 202, camel, 210

Harpoon, 143, fg. 141

Hastin, 87

Hastiyuddha, 91

Hath-jhool 113, fg. 86

Hathnāl, 161, *narnāl*, 161

Hawāi, 96

Hāzir-i-rikāb, 147

Heavy cavalry, 21

Helmet, 161, fgs. 185-190

Hemabandha, 15, 53

Hemu, elephant, 96, Hawāi, 96

Hermitage, Leningrad, 13

Hide, 3

Hilt, ivory, 135

Horse, prehistoric, 13, Mohenjodāro, 13, Marathā, 31, classification, 21, West Asia, 21, Persia, 21, armour, 27, bowman, 121

Horse archery, 121, fgs. 89, 90

Horn, bow, 123, cheekbar, 190

Horse breaker, 81

Horse broker, 25

Horse doctor, 204, *Āin-i-Akbarī*, 204, *bayṭar*, 204

Horse frontale, 7, fg. 9

Horse furniture, 1

Horse instructor, 188

Horse on boat, 24, fg. 21

Horse muster, 203

Horse-shoe, 61, fg. 37, *nāl*, 61

Horse shows, 233

Howdāh, 107-111, fgs.79, 80

Hunting, 1, scene, 9, on *talwār*, 137, fg. 121

Hydaspes battle, 19

I

Ibha, 87-88

Imarī, 108, fg. 81

Imbricate stable, 202

Ingot, 7

Injecting oil, 211

Inscribed arrow-head, 125

Interlinking of rings, 7, 8, fg. 8

Intoxicated elephant, 89

Introduction of mail, 7

Iraqi horse, 25, Jahāngīr, 29

Iron scale, 5

Ivory, cheek bar, 191, hilt, 135 fgs. 122, 136, gunpowder flask, 158, fg. 184, shaft for *aṅkusha*, 192

J

Jagawat, 105, *gad*, 105

Jahāngīr, horse, 29, saddle, 29

Jaibāh, 127

Jāla, 91

Jāma-i-zur-dozī, 199

Jamadhar, 135, fgs. 129, 130, 132

Jambiā, 135

Jamdār-khānā, 199

Jammāza, 207

Javelin, 17, 89, 145, Porus, 91

Jazerant, 2, fg. 1

Jhool, 113, *hath-jhool*, 114, fgs. 86, 87

Jibā-khānā, 25

Jigha, 95

Jilawdār, 204

Jilwana, 205

Joshan, 25

Jūnā, 161

K

Kājem, 30, fgs. 25-6

Kakshya, 35, 89

Kalaghī, 161

Kalhaṇa, elephant, 93

Kālidāsa, elephant, 93

Kamand, 201

Kamar-band, 201

Kamar-zarīn, 199

Kamboja, horse, 17, 21

Kanṭop, 161

Karawā, 123

Kard, 135, fgs. 123-8

Kardang, 133, *chapras*, 13, *gosha-gīr*, 133

Kārkhānā, 199, Firuz, 199, Shivijī, 200

Kasha, 59

Kāṭhī, 67

Kauṭilya, cavalry, 19, elephant, 183 ff, horse, 187 ff

Kettle-drum, 93

Khalkha, 161

Khanjar, 135

Khāsa, horse, 27, 201, stable, 201

Khud, 161

Khuda Bux Library, 2, fg. 2

Khuttalis, 21, manufacturers of saddlery, 21

Kilāwā, 105

Kilij, 135

Knuckle-guard, 149, fg. 154

Koḍā, 59

Kohl horse, 23

Koṇārka horse, 35

Kuhah, 25

Kuh-daman elephant, 94

Kulah zirah, 161

Kunjara, 88

L

Lagām, 51, bridle, 51

Lamellar, details, 4, fg. 4, composition, 5, plate, 72, fg. 65, armour, 164, fg. 202, steel trunk protector, 112, fg. 84

Laminated armour, 5

Lance, 17, 77, Marāthā, 145, parts, 145

Lancing of scale armour, 3

Lavaṇa kalāī, 61

Leaf-shaped arrow-head, 129, fg. 103

Leather, armour, 1, 113, saddle, 68, sleeve, 133, stirrups, 3

Leg armour, 171, fgs. 222-4; 172, fgs. 227-8

Leg guard, 62, fg. 54; 74, fg. 66; 165, fg. 206

Leilet al Kudder, 27

Light cavalry, 21, 31

Links making, 7

Loh langar, 105

Lok camel, 211

Loop, 78, fg. 71

M

Mace, 146, fgs. 144-152

Māgha elephant, 93

Mahābhārata cavalry, 17, elephants, 88, *aṅkusha*, 195

Mahāut, 91

Mahméz, 81, fgs. 73, 74

Mahmud, Ghaznī, cavalry, 21, Begarhā, 25

Mail, 12, armour, 5, 7, making, 7, construction, 8, fg. 8, horsmen, 21

Magas-rān, 202

Manufacture, saddlery, 21, arms, 199

Mānasollāsa, 21, horse 21

Mane, 35

Marāthā, horse, 31, saddle, 75, cavalry, 131, lance, 145, elephant, 95, *gurj,* 150, fg. 156

Maruts, 15

Matchlock, 147, fgs. 176-180

Material, scale, 5, iron, 5, wood, 5, silver, 5

Mauryan, cavalry, 19, elephantry, 91

Megasthenese, 103, war elephant, 103

Megh dambar, 105

Metal armour, 3

Military training, 17

Mīradah, 204

Mobility, 23

Mock battle, 89

Mohenjodāro horse, 13, elephant, 85

Movements of horse, 187

Mounted archer, 29, 49, warrior, 121

Mozah-i-ahanī, 173, fgs. 222-4

Mṛga, 85

Mudgara, 17

Mufridan-i-rikāb, 77

Muhammed Ghurī, cavalry, 21

Mulammā, 9

Mughal, cavalry, 27, elephantry, 94, *howdāh*, 107, fg. 79, *jamadhar*, 139, fg. 132, *phārī*, 163 fg. 201, *qirbān,* 143, fg. 142, saddle, 75, spur, 80, fg. 74, stirrups, 80, fg. 73

Muhnāl, 133

Murattab, 25

Mushrif, 204

Musket-proof armour, 107

Muzzle, 28, fgs. 23, 59

N

Nādirī, 29

Nādir Shāh, 33, cavalry, 33

Nagarāyaṇa, 91

Nair temple sword, 143, fg. 139

Nāl, 29, 59, *nālband*, 202

Nālabandī, 59

Nanda elephantry, 91

Napthā, 123

Nāqib, 204

Nareha, 89

Narnāl, 161

Net armour, 113

Nikāya horse, 19

Nīmchā rānak, 171, fg. 214

Nock, 123

Nimismatic evidence, horse archery, 119

O

Ohind Kings, 21, horsemen on coin, 21

Onion-shaped helmet, 2, fg. 2

Origin, armoured horse, 15, stirrups, 77, elephantry, 85

Ornamentation, 9

Ox-hide, 192, used as bit, 192

Oval, arrow-head, 122, fgs. 92, 94, *gadā*, 146, fgs. 148-150, helmet, 160, fg. 190; 163, fg. 200

Overlapping of plates, 5

P

Padding, 4, fg. 5

Pagoshi rule, 209

Pagosht rule, 209
Pāik, 77, 121
Paikan-kash, 125
Pākhar, 69, *paryaṇa*, 69
Pangolin scale, 6, fg. 6
Pānīpat, first battle, 123, second battle, 96, Hawāi, 96
Panjamukha, 145
Parāshvavadha, 17
Paryaṇa, 69
Paṭṭā, 135, fg. 119
Pay-band, 201
Pay ranjan, 105
Peacock throne, 33
Pear-shaped arrow-head, 130, fg. 113
Peel khānā, 199
Peshwā horse, 31
Petī, 4, fg. 3
Phārī, 163, fg. 201; 172, fg. 229
Pichwā, 105
Pike, 145, fg. 143; 151, fg. 160; 153, fg. 167
Pindārī, 33
Pindī *ballam*, 145
Pistol-shaped hilt, 135
Pitkachh, 105
Piṭhaka, 67
Piyāzī, 147
Plate armour, 3, 7
Plume, 51 *kalaghī*, 51
Point, arrow-head, 123
Pointed spurs, 77
Poisoned, arrow, 121, arrow-head, 125
Poitrel, 59, fgs. 31, 54, 55
Porus, elephant, 93
Pots of oil, 91
Practising archery, 128, fg. 99
Pradhāna, 198
Pratodā, 77
Prehistoric horse, 13
Presentation of armour, 9
Price, horse, 25, quiver, 127
Prick, 77, spur, 77
Projectile, 145
Production, scale armour, 5, mail, 7
Protected snaffle, 191, Taxila, 191
Pusht-tang, 27

Q

Qaptāl, 27
Qarbus, 73
Qash, 73
Qashqā, 49-51, fgs. 32-33
Qatār, camel, 209
Qatarchī, 210
Qayzā, 202
Qazzaks, 33
Qirbān, 127, fgs. 115, 116
Qisrāqs, 202

Quilted, armour, 1, cotton, 21, fg. 18, elephant covering, 86, 58, fg. 52

Quiver, 127, fgs. 115, 116

Qutās, 105

Qutubul Mulk, 109, presented *Nūr-i-Naurūz,* 109

R

Radandāz, 95

Raibārī, 212

Rajasthan, 209, camel, 209, *aṅkusha*, 106, fg. 78

Rāk, 176, fg. 228

Rakāb, 68, fg. 57

Ramāyaṇa, cavalry, 17, harness, 45, saddle, 67, elephant, 87

Rānā Sāngā, 123

Rānak, nīmchā, 171, fgs 214-9, combined, 171

Rank bearer, 93

Ranks of camel, 211

Rashmi, 55

Ration for horse, 187

Ravaṇa, elephant, 87

Raw hide scale, 5

Reed, 125, shaft, 125, fg. 106

Repousse, 11

Ribbed helmet, 28, fgs. 24, 164

Riding, 1

Rigidity of scale armour, 5

Rikāb, 75, *rikābadār,* 77, *rikāb-khānāh,* 199

Rings, butted, 7, riveted, 7, links, 7

Riveting, 3, 9, riveted, 7

Rocket, wagons, 27, Bābur, 27

Rowel, 77

Ṛsti, 17, short sword, 17

Rūm-ratan, 29

S

Sadarī, 159

Saddle, 69-77, fgs. 57-60

Saddlery, 21, manufacture, 199, *rikāb-khānāh,* 199

Sāghadāq, 127

Saintie, 145

Sāis, 204

Salar Jung Museum, 13

Saṁvartana, 91

Sānchi, stirrups, 77, war elephant, 103, *aṅkusha,* 195

Sarjandār, 199

Sawārān-i-muqatalā, 123

Sāz, 31, 95

Scale armour, 3, fg. 6, production, 5, features, 5, decoration, 5, shape, 5, metal, 51, fgs. 38, 166

Science of horse, 21

Serrated arrow-head, 122, fg. 91; 128, fg. 108

Shabraques, 3

Shaft, incised, 17, 123

Shakti, 17

Shamshīr, 135, fg 122

Shape of scale, 5

Shield, 159, bearer, 159

Shikār khānā, 199

Shipra, 15

Shishupālagarh, caltrop, 197

Shivajī, *kārkhānā*, 200

Shutarnāl, 161

Silehdār, 199

Sileh-khānā, 199, *silehdār*, 199

Silver, locket, 136, fg. 123

Sindh, horse, 21

Sinew, 3, 123

Sipandsoz, 205

Siprā, 53

Sirāj-ud-daulā, 49, horse, 49

Sirduālī, 53

Sileh khānāh, 199

Sirkap, 192, armour, 192

Sleeveless armour, 2, fg. 2

Skirmishing, 17

Snaffle, 53, bit, 189, Taxila, 191-2

Somadeva, 21, cavalry, 21

Someshvara, 21, cavalry, 21

Sosunpaṭṭā, 135, *paṭṭā*, 135, fg. 119

Spear, 17, 57, fg. 49

Spike, 197

Splint armour, 5

Spur, 77

Supratīka, 88

Stable, 25, Jahāngīr, 29, 185, *Āin-i-Akbarī*, 201, camel, 207

Stallion, 187

Steel, bow, 123, coat, 121

Stirrups, 3, 26, *Rāmāyaṇa*, 67 *Mahābhārata*, 67, 75, 76, fg. 70, origin, 77, holder, 77

Stone, precious, 9, armour, 9

Superintendent of horse, 187, Kauṭilya, 187

Sword, 28, 87 fg. 22, Bābur, 131, knot, 133

Swordsman, 131, fg. 118

Swivel, 161

T

Tab, 133

Tabar, 147 fgs. 159-167, *zaghnol*, 147, fg. 168, *zīn*, 55

Tabin, 27

Tail, band, 45, guard, 59, piece, 59

Taksha-andāz, 95

Talāyir, 29

Talwār, 121, 135, fg. 121

Tanjore, *jamadhar*, 138, fg. 131

Tankā, 23

Target, 17

Tārīkh-i-Khāndāna-i-Timūriā, fg. 2

Tārīkh-i-Firūz Shāhī, 197

Tarkash, 125

Tassels, 21, fg, 18; 32, fg. 27; 34, fg. 30, yak tail, 51, fg. 40

Tayyā, 105, *Āin-i-Akbarī*, 105

Tayyā, 105, *Āin-i-Akbarī*, 105

Taxilā, animal armour, 191

Technique, ornamentation, 9, fgs. 11-12, chiselling, 11, engraving, 11, etching, 11, *respousse*, 11, filigree, 11

Tilwā, 161

Tinkling bells, 86

Tip, 131

Tīpū, cavalry, 35

Tipūchāq, horse, 9, 69

Tīr-kash, 125

Tugh, 103

Tool, *chermā*, 9

Topakhānā-i-rikāb, 77, 147

Tower of London Armouries, 4, fg. 5; 6, fgs. 6, 13

Toltra, 91

Trapping, 1, fabric, 3, 15, 23, 29, 25

Training, elephant, 184, horse, 188

Tread, 76, fg. 70

Triangular arrow-head, 128, fg. 105

Tribe, Ashvaka, 21, spike, 197

Trident, 126, fg. 100

Triple, arched arrow-head, 122, fg. 93, curved arrow-head, 124, fg. 97, headed, 129, fg. 112

Trooper's stirrups, 78, fgs. 71-72

Trunk protector, 113, fgs. 82, 83, 85

Twisted hilt, 137, fg. 130

Tukkā, 129, fg. 109

Tusk cover, 113, fg. 84

Turkestan, horse, 21, bow, 121, helmet, 162, fgs. 197-8, saddle, 67

U

Umbo, 191, bosses of shield, 191

Ummayyid, Caliphs, 21, cavalry, 21

Unbitted horse, 53

Upasthāna, 91

Use of stirrups, 77

V

Vaijayantī, 91

Vājasaneyī Saṁhitā, 15, horse, 15

Vākāṭaka, 20, fg. 16, reins, 20

Vala, 49

Valgana, 188

Vanaya, horse, 21

Vāraṇa, 87

Varanasi, 6, Banaras Vidya Mandir, 6, fg. 7

Varma, 91

Vaulting pole, 77

Veda, cavalry, 15, elephantry, 85

Velvet, 3, green, 4, fg. 3; 6, fg. 6; 22, fg. 19, *qirbān*, 125

Veterinary surgeon, 204, *baytar*, 204

Victoria and Albert Museum, 4, fg. 3

Vikarma, 189

Vimāna, 105

Vinaya, horse, 19, elephant, 89, *Piṭaka*, 89

Virupāḳsha temple, 87

Vishvāntara Jātaka, 35, Ajantā horse, 35

Vyajana, 49

W

Wagon, rocket, 27, Bābur, 27

Waist coat, 161, armour, 161, fg. 204

War, chariot, 15, elephant, 88, 93, 103, 112, horse, 13, 14, 19, 23, 25, 35, 50, bitted, 72, fg. 64, animal, 88, drum, 208, fg. 231, instrument, 91

Watered steel, 135

Wax cloth, 210

Waving light, 189

Weight, armour, 1, 9

West Asia, horse, 21

Whip, 61, *kashā,* 61

Windsor Castle, 10, fg. 11, *chār-āinā,* 10, fgs. 11, 13, 61

Wire, drawing, 7, 9,

Wood, scale, 5

Wool, armour, 3

Y

Yāk tail, 51, fg. 40

Yālposh, 202

Yamaka, 188

Yantra, 91

Yātāghan, 135, Turkish sabre, 135

Yāvatkalikam, 188

Yemen, horse, 23, Egypt, 23

Yoked horse, 15

Yusuf Ali, 81, stirrup-holder, 81

Z

Zabīla, 2

Zaghnol, 147

Zambūraka, 161

Zakariya Khān, 3

Zarī, 135

Zarkoe Selo Collection, 77

Zeionises, 19

Ziauddīn Baranī, 25, horse, 25

Zihgir, 133

Zīndār, 204, saddle-holder, 204

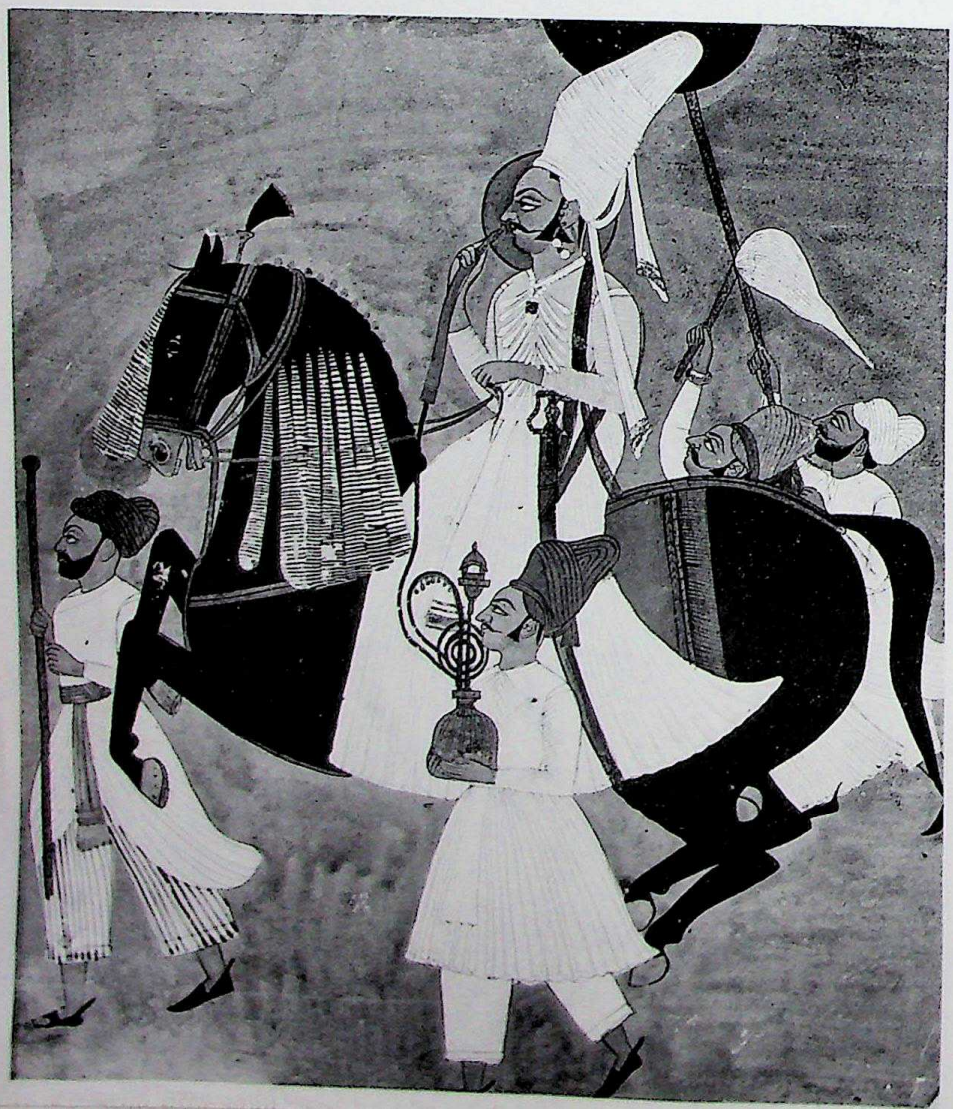
Zirah-kurtā, 161, *aṅgrakhā,* 161

Pl. I — A stone medallion depicting a scene from Buddha's life. The horse here is bridled with a blanket on his back. Bharhut, Shunga, 2nd century B.C. (Archaeological Survey of India, New Delhi)

Pl. II — A throne leg of metal depicting a *vyāla* (mythical animal). Orissa, 16th century A.D. (National Museum, New Delhi Collection)

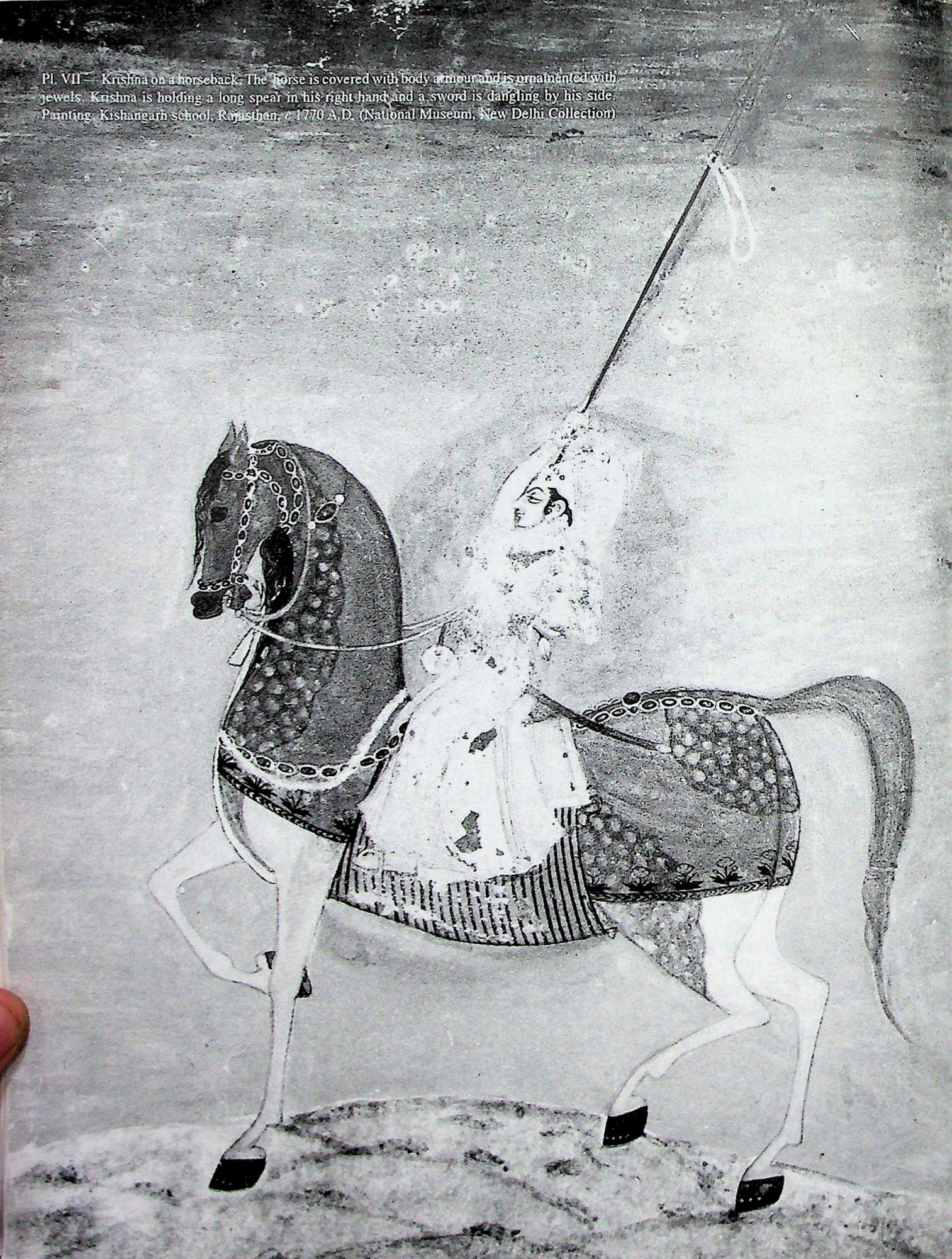
Pl. III — *Rāga Māru*. On the upper half two cavaliers are fighting—one of the horses is fully armoured. In the lower half elephant-riders are showering arrows on a horse-rider. Painting, Malwa, c. 1700 A.D.

Pl. IV — A folio from an illustrated manuscript showing a story from the *Panchatantra*. The elephant, in front, is decked with *jhūl*, necklace and tusk protector. The horses yoked in chariots or driven independently are bridled and saddled. Most of the knights are armoured from head to foot. Mewar, Rajasthan, *c.* 1720 A.D. (National Museum, New Delhi Collection)

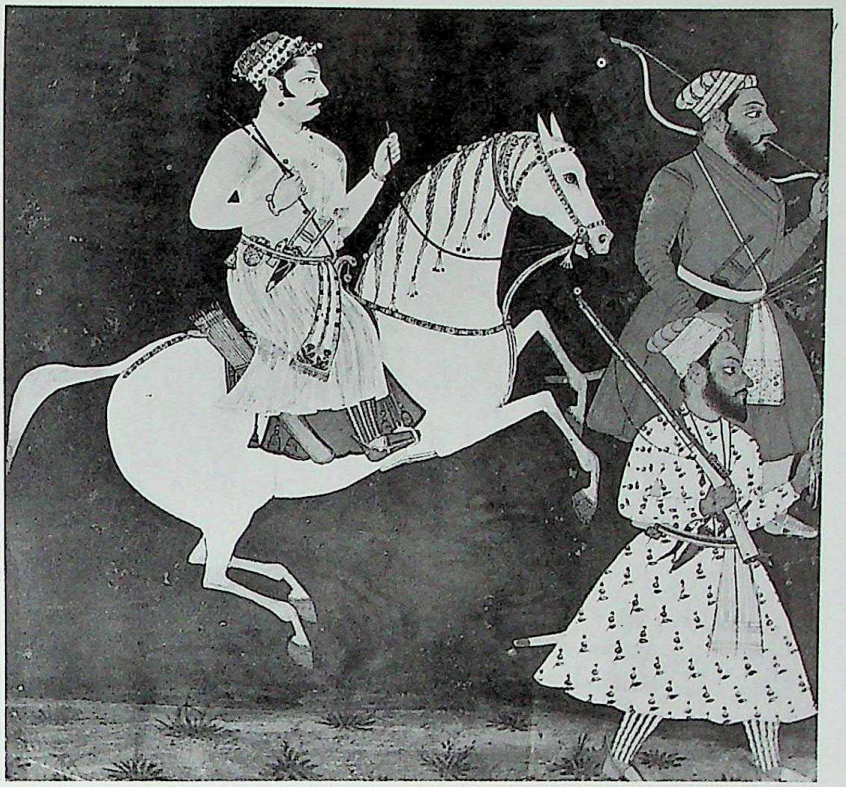


Pl. V — A cavalier riding a caparisoned horse is escorted by foot-soldiers. The bridled horse is ornamented with tassels. Painting, Nagaur school, Rajasthan, late 18th century (National Museum, New Delhi Collection)

Pl. VI — Shivaji riding a bridled and harnessed horse, He is holding a *paṭṭā* sword in his right hand and a *jamadhar* is struck to his waistbelt. All his soldiers are carrying swords and shields. Maharashtra, 17th century A.D. (from a contemporary drawing)

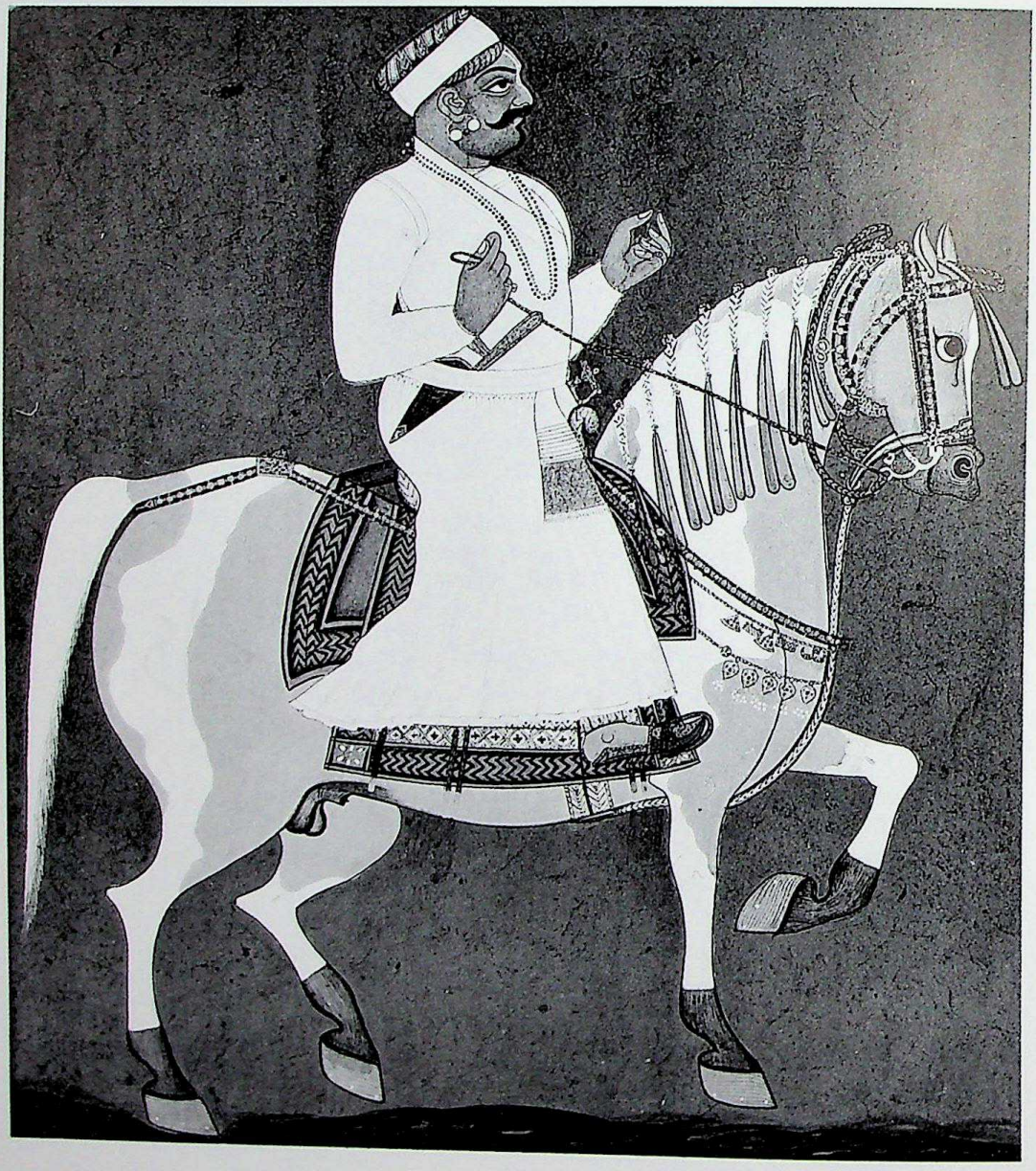


Pl. VII — Krishna on a horseback. The horse is covered with body armour and is ornamented with jewels. Krishna is holding a long spear in his right hand and a sword is dangling by his side. Painting, Kishangarh school, Rajasthan, *c* 1770 A.D. (National Museum, New Delhi Collection)



Pl. VIII — A prince riding a scantily dressed galloping horse. A foot-archer and a mathlock-bearer escort him. The animal is saddled and bridled. Painting, Bundi school, Rajasthan, *c.* 1750 A.D. (National Museum, New Delhi Collection)

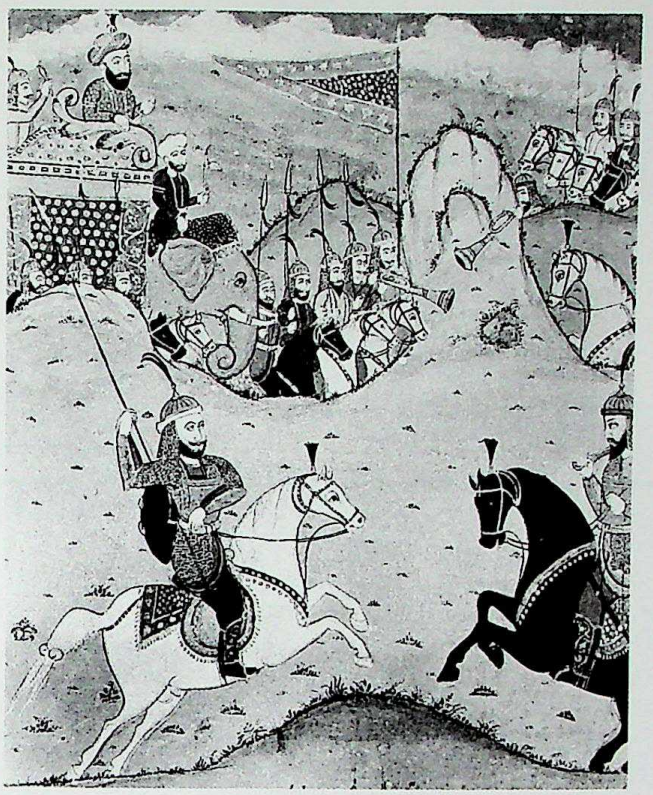
Pl. IX — Rao Budh Singh of Bundi riding a caparisoned horse. The horse is decked with a *kalaghī*, tassels, bridle, saddle and bands. Painting, Raghogarh school, Rajasthan, mid.18th century A.D. (National Museum, New Delhi Collection)



Pl. X — A nobleman riding a saddled and bridled horse. Painting, Raghogarh school, Rajasthan, mid. 18th century A.D. (National Museum, New Delhi Collection)

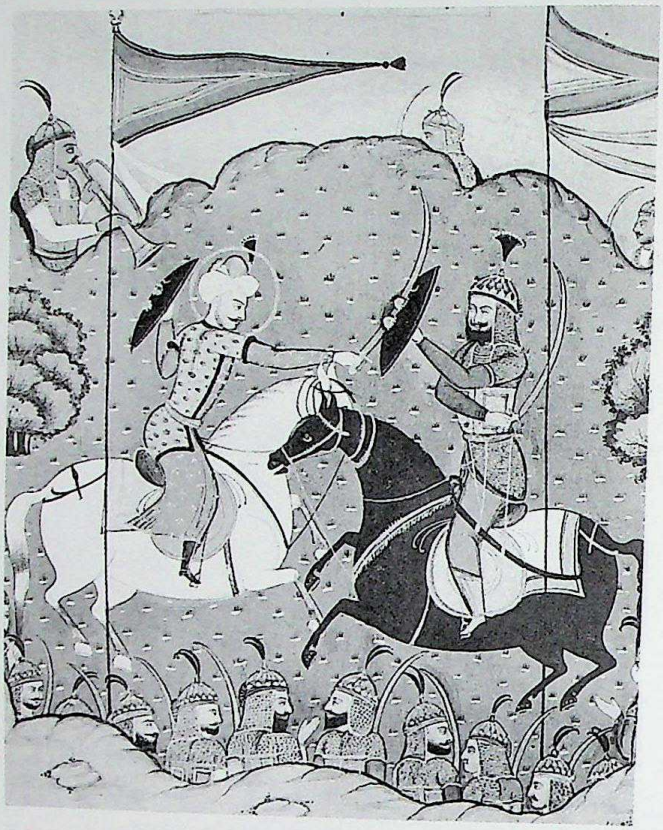
Pl. XI — A prince riding a horse decked with saddle, bridle, tassel and crest. Painting, Bundi school, Rajasthan, mid. 18th century A.D. (National Museum, New Delhi Collection)

Pl. XII — Cavaliers engaged in fighting with shields, swords and spears. All the warriors are wearing ribbed helmets while some of them are putting on chain armour fitted with *chār-āinā*. The war-animals are scantily decked. From the illustrated manuscript of the *Sikandarnāmā*, *c* 1800 A.D. (National Museum, New Delhi Collection)



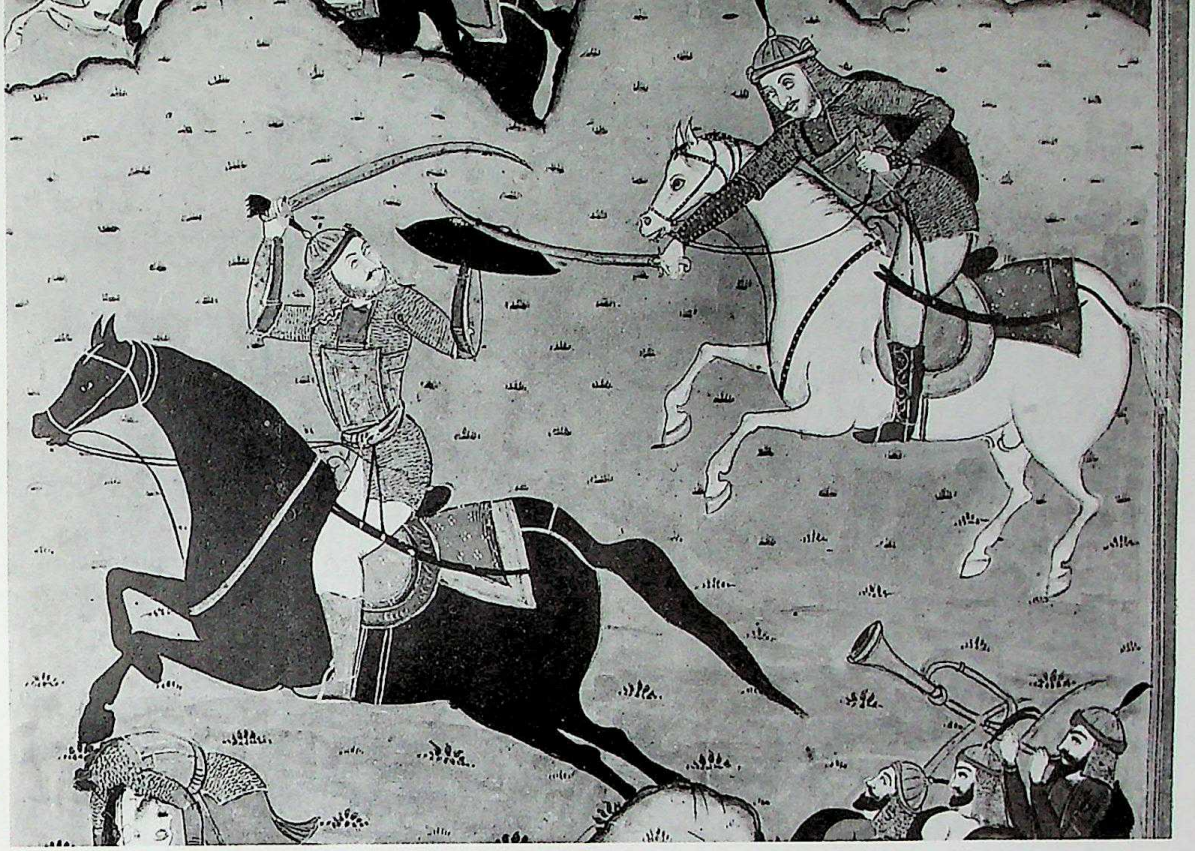
Pl. XIII — A war scene. The Sultān, seated in a *howdāh* on an elephant, is escorted by his armoured cavaliers. In the front, two horse-riders, fully armoured, are confronting each other. From the illustrated manuscript of the *Sikandarnāmā, c* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XIV — Two horseman in the midst of a battle; one holding a shield and a spear and the other a *gadā*. The warriors are fully armoured. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)



Pl. XV — The feat of sword and shield. Two horse-riders are witnessing the duel. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XVI — A battle scene,. Two horse-riders have jumped out of their horses and are engaged in hand to hand fight. The soldiers, mostly armoured, are holding clubs. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)



Pl. XVII — An armoured cavalier strikes with his sword which falls on the shield of another cavalier. The horses are bridled and saddled. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XVIII — Two fully armoured cavalier are confronting each other. A beheaded soldier is lying on the ground. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XIX — A battle scene; fully armoured knights, riding their horses, are fighting with spears, swords and shields. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National museum, New Delhi Collection)

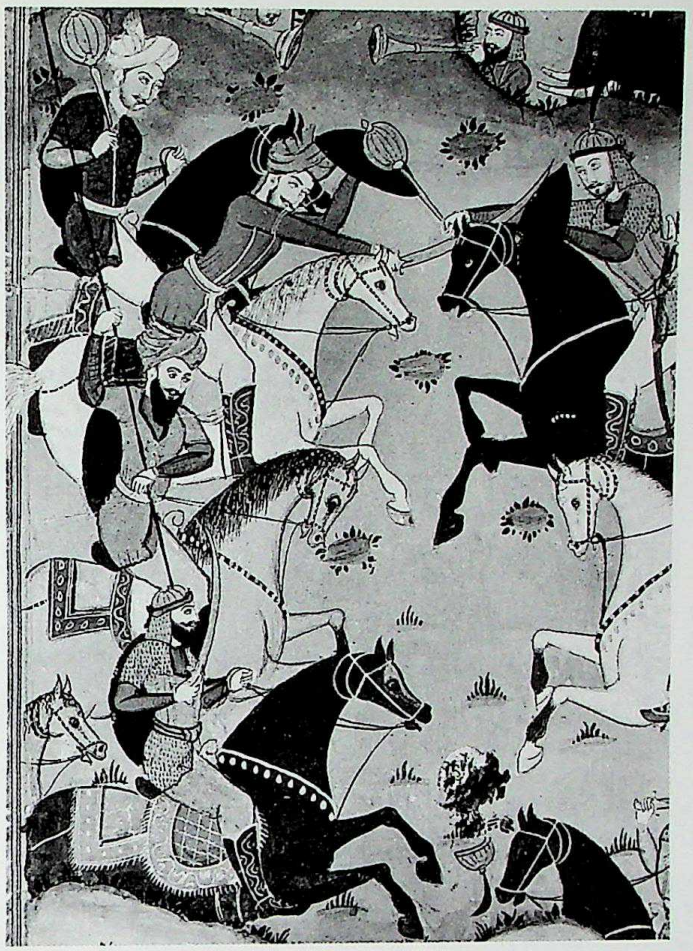
Pl. XX — Horse riders engaged in a battle. The war - animals are saddled and bridled and the knights are armoured. From the illustrated manuscript of the *Sikandarnāmā,c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXI — An armoured horse-rider riding a bridled and saddled horse. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXII — A battle scene wherein cavaliers are fighting with bows and arrows, clubs, swords and shields. A caparisoned elephant is also present. From the illustrated manuscript of the *Sikandarnāmā*, c. 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXIII — Fully armoured cavaliers fighting with spears, swords, shields and bow. An elephant wearing tusk protector is in the background. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXIV — A battle scene. A caparisoned elephant and armoured horsemen are engaged in fighting. War music is on. From the illustrated manuscript of the *Sikandarnāmā*, *c.* 1800 A.D. (National Museum, New Delhi Collection)



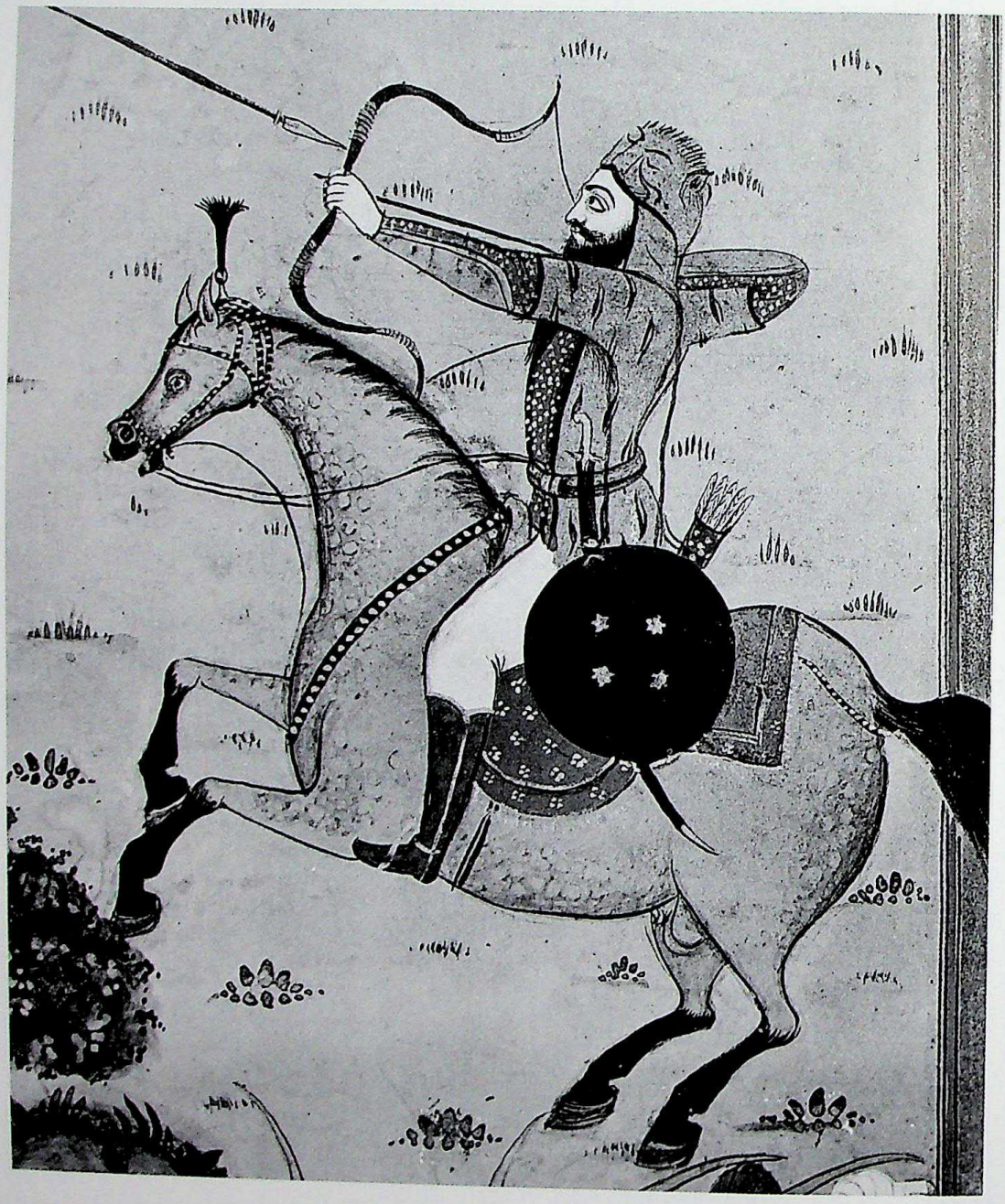
Pl. XXV — Horsemen engaged in a battle; spears, clubs, shields and swords are employed. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXVI — Sawai Pratap Singh of Jaipur riding a horse profusely ornamented; the bridle is studded with semi-precious stones. Painting, Jaipur school, Rajasthan, end of the 18th century A.D. (National Museum, New Delhi Collection)

Pl. XXVII — A prince of Datia riding an ornamented horse; specially noticiable are the two bangle-like ornaments on the forelegs. Painting, Datia (M.P.), *c.* 1700 A.D. (National Museum, New Delhi Collection)

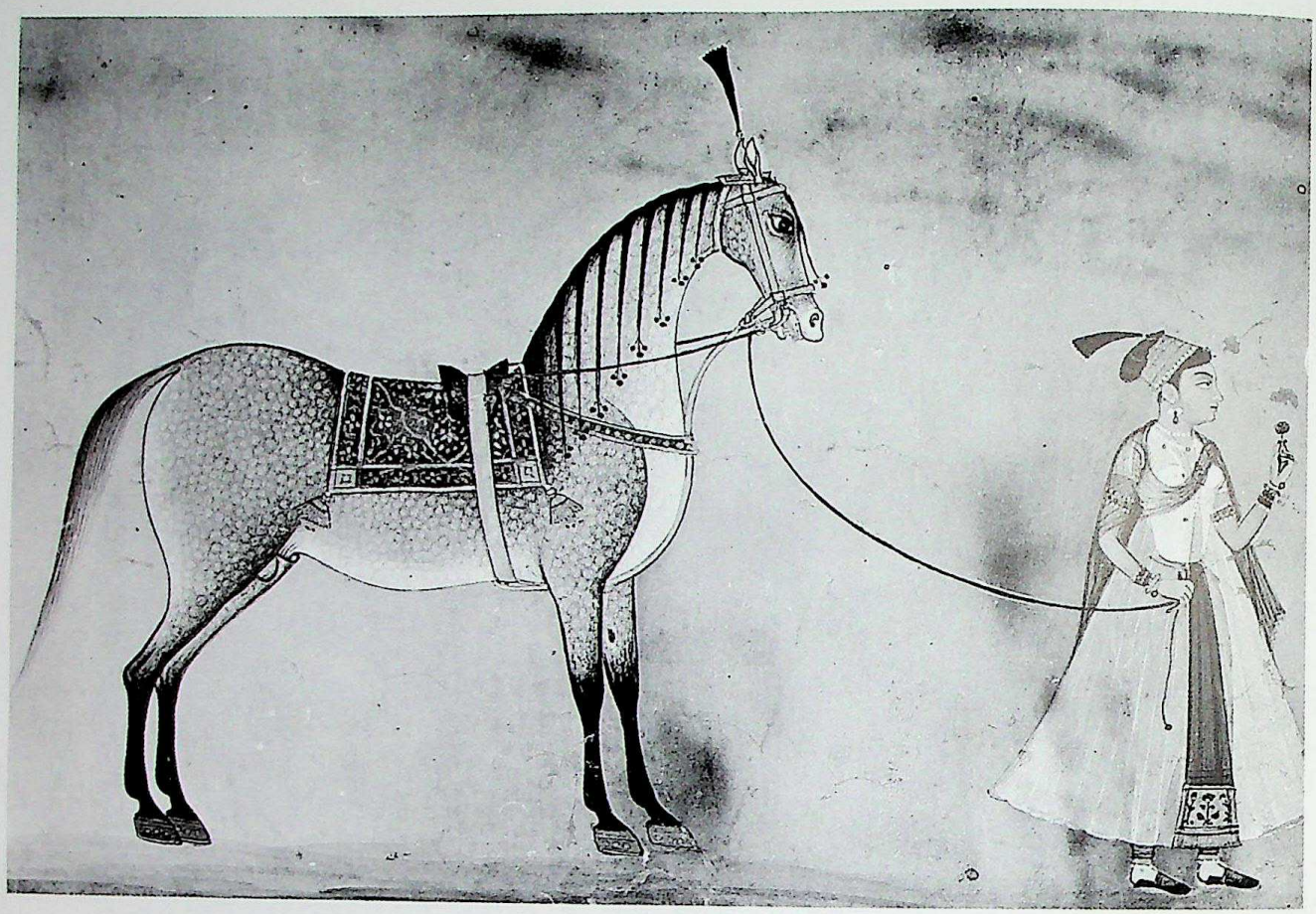
Pl. XXVIII — Fully armoured Sultān holding a spear and a shield; the bridled and saddled horse is harnessed. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXIX — Armoured knight wearing chain armour fitted with *chār-āinā* on a harnessed horse. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)



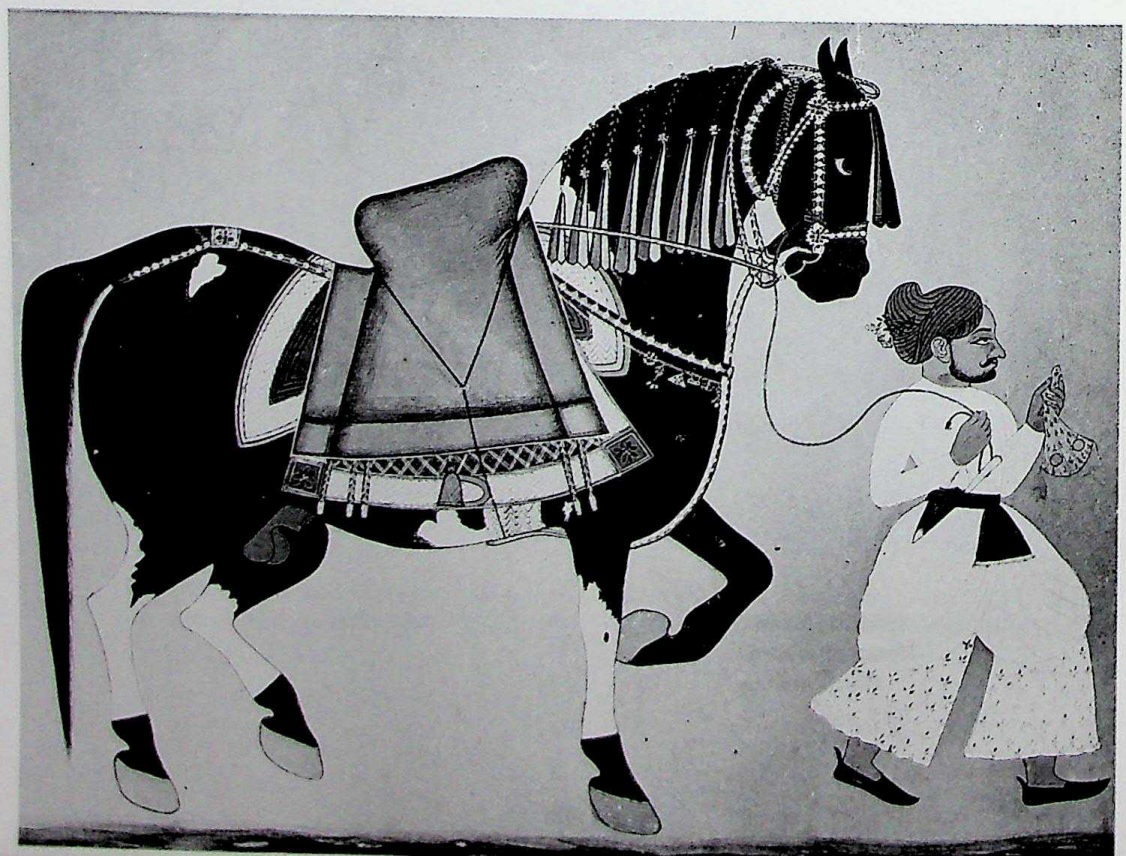
Pl. XXX — A horse archer, well protected, stretches his bow full. A quiver filled with arrows is dangling to his right. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. XXXI — Armoured cavaliers in a battle, using bow and arrows, swords and clubs. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

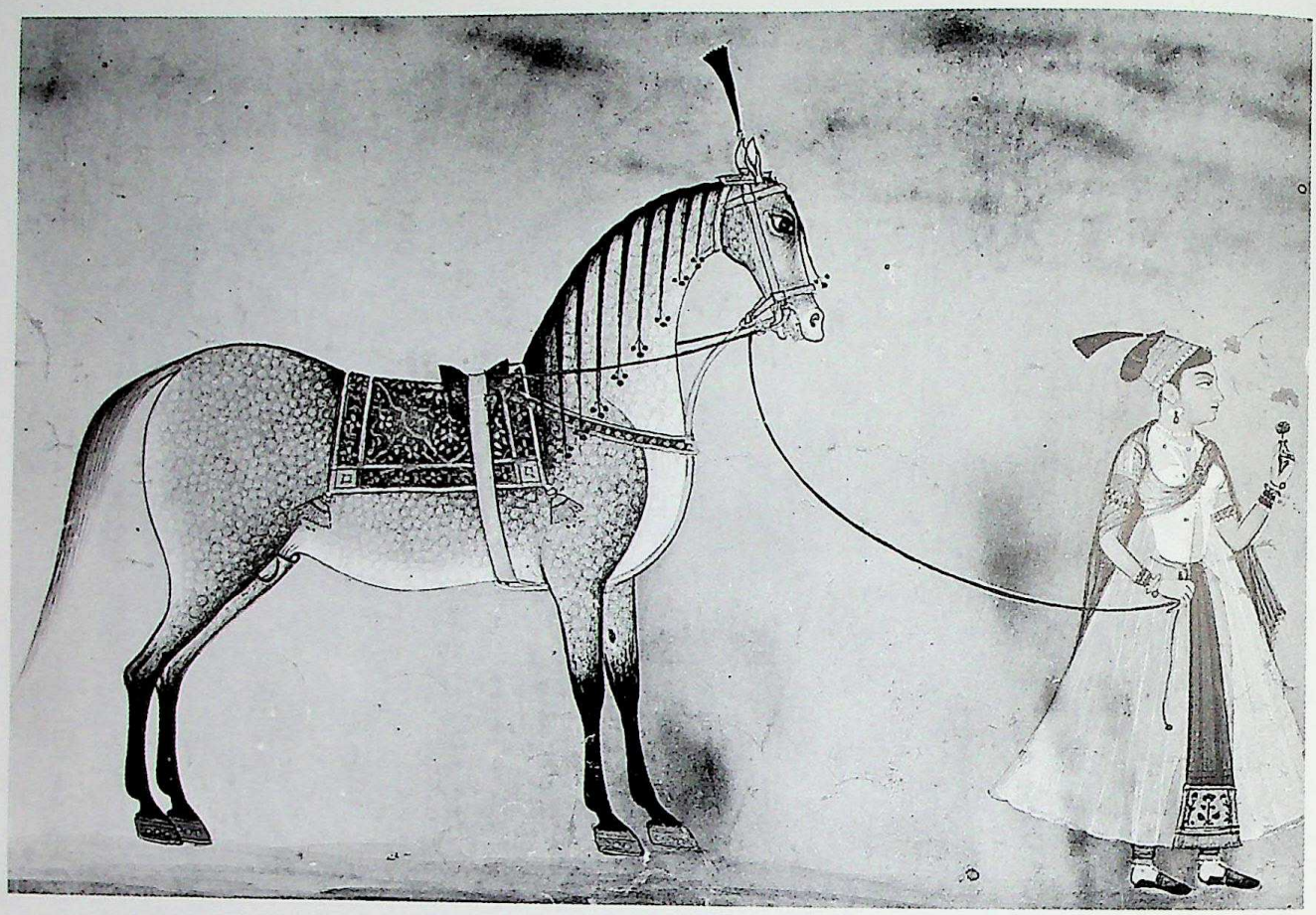


Pl. XXXII — A saddled horse. A small saddle placed on an ornamented cloth is tied with a breastband. Painting, Bikaner school, Rajasthan, early 18th century A.D. (National Museum, New Delhi Collection)

Pl. XXXIII — An unusual saddle with stirrups. The horse is beautifully ornamented. Painting, Raghogarh school, Rajasthan *c.* 1780 A.D. (National Museum, New Delhi Collection)



Pl. XXXIV — *Kalki Avatāra*, specially noteworthy is the saddle with its stirrups. The upper half of the horse is protected with body armour of fabric. Painting, Bundi or Uniara school, Rajasthan, *c* 1800 A.D. (National Museum, New Delhi Collection)



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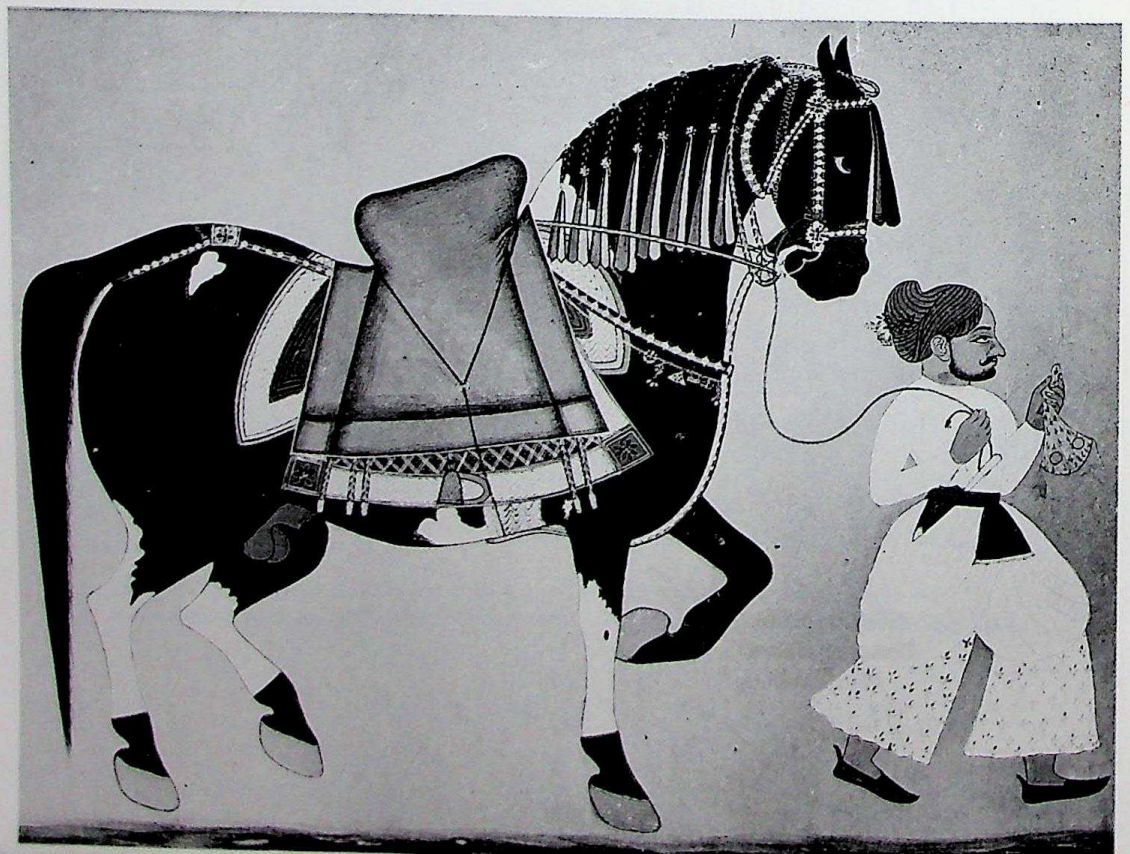
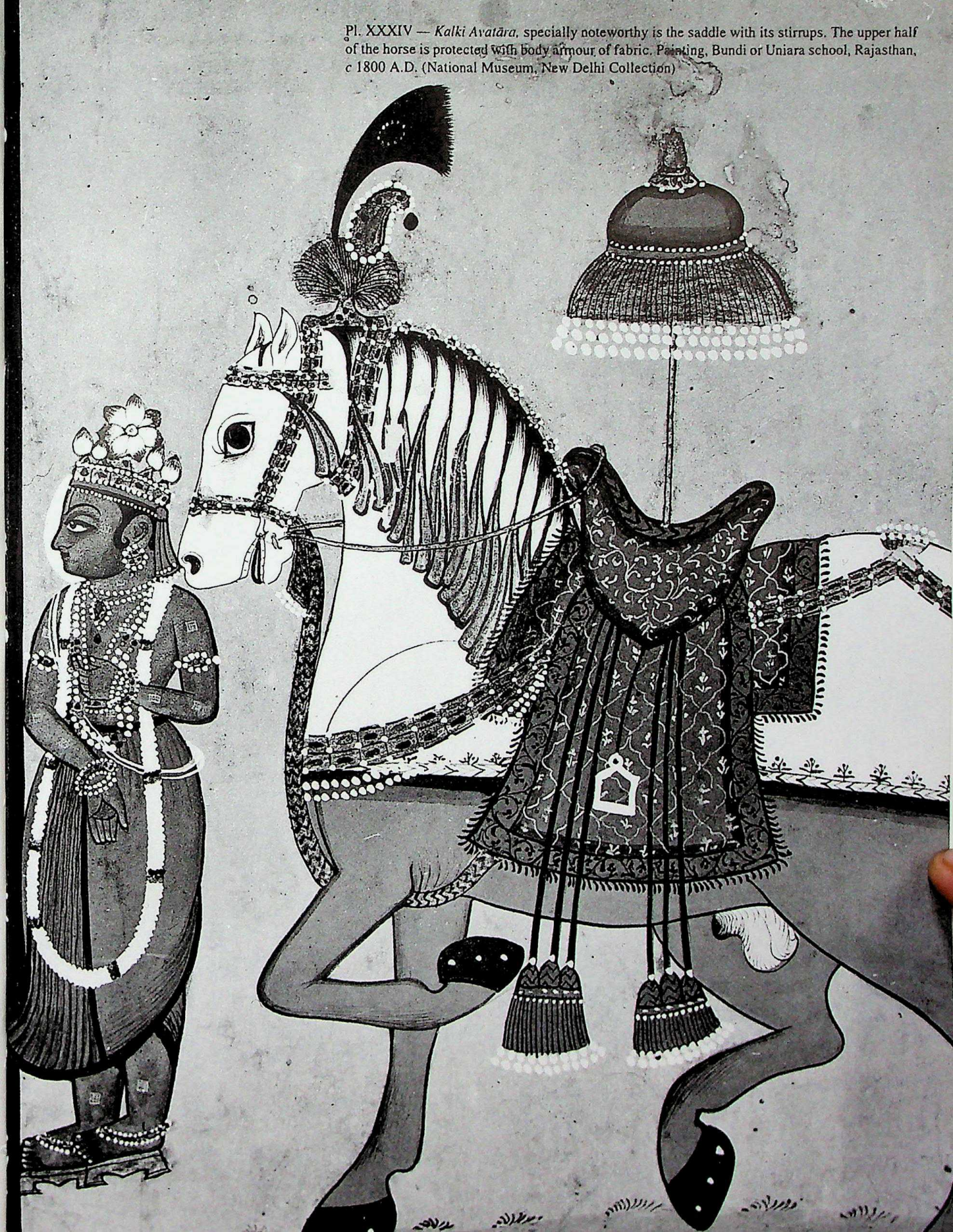
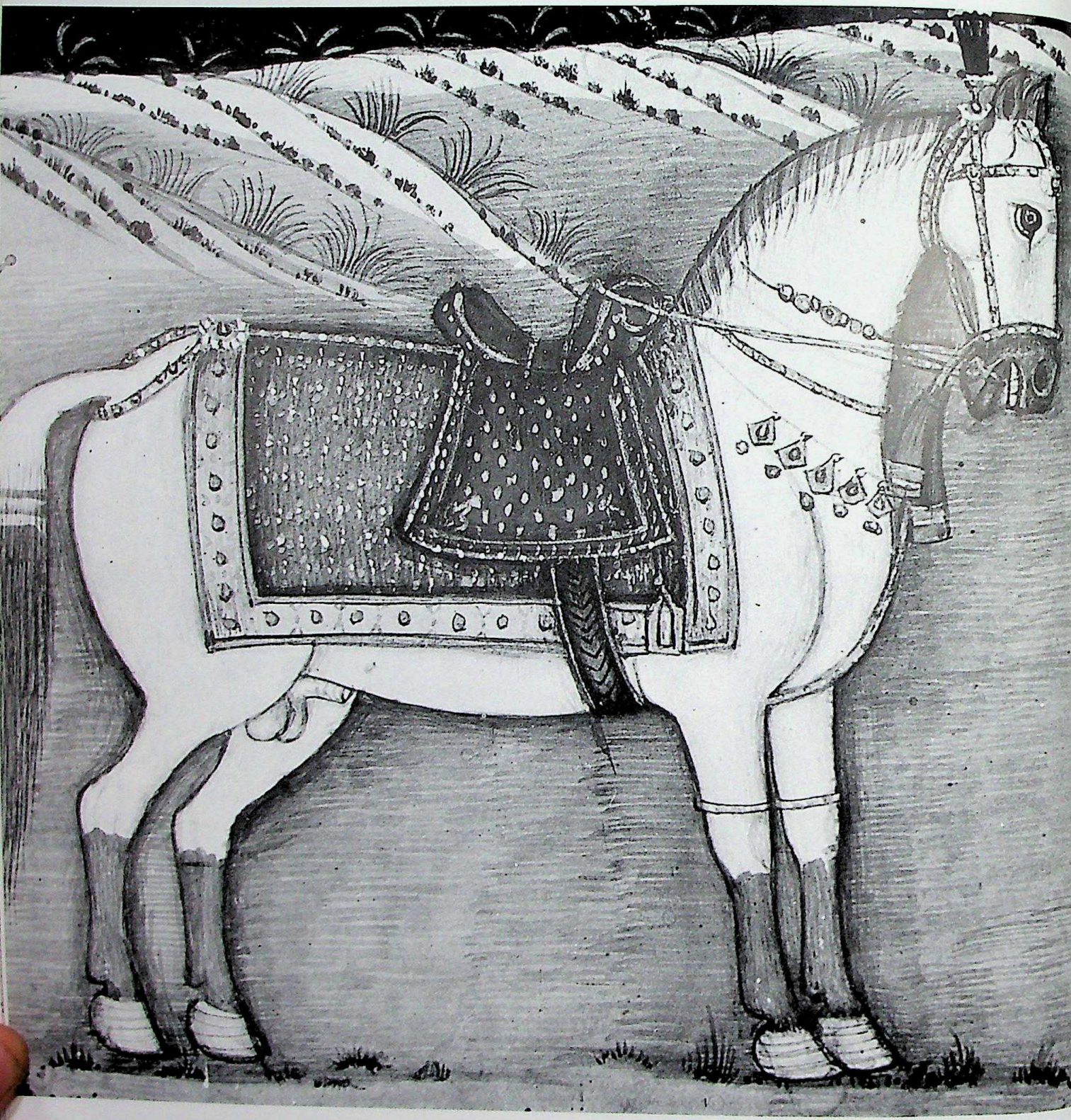
Pl. XXXIII — An unusual saddle with stirrups. The horse is beautifully ornamented. Painting, Raghogarh school, Rajasthan *c.* 1780 A.D. (National Museum, New Delhi Collection)

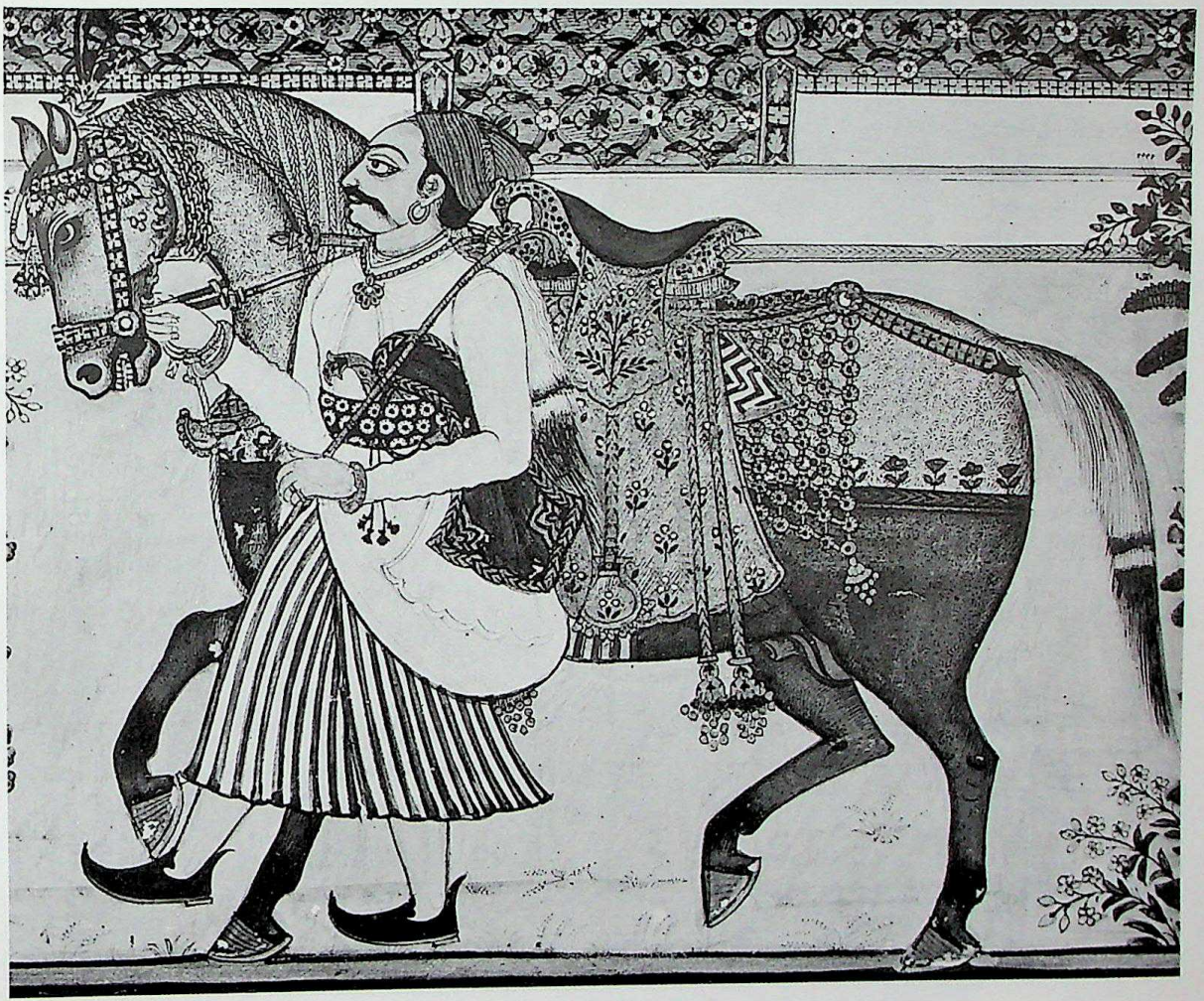




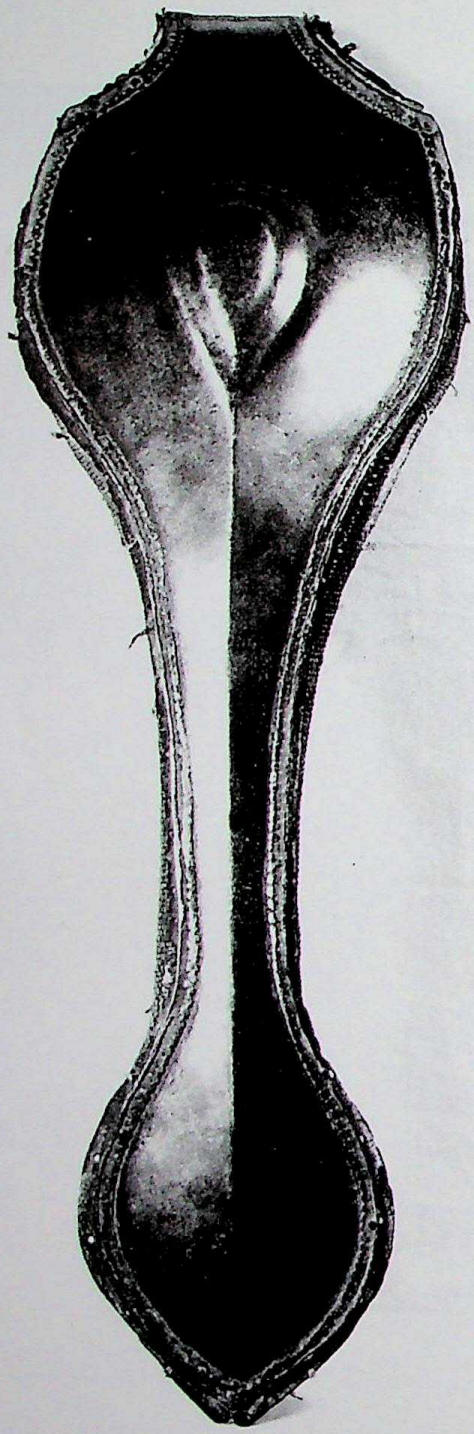
Pl. XXXIV — *Kalki Avatāra*, specially noteworthy is the saddle with its stirrups. The upper half of the horse is protected with body armour of fabric. Painting, Bundi or Uniara school, Rajasthan, *c* 1800 A.D. (National Museum, New Delhi Collection)



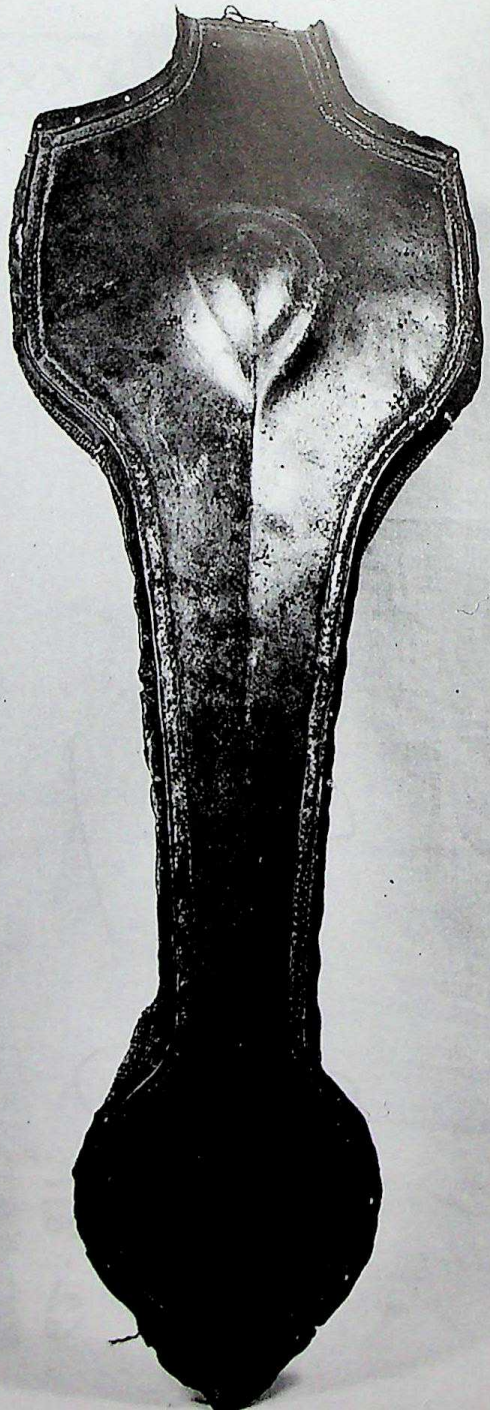
Pl. XXXV — The saddled horse of Raja Harish Chandra. The saddle, placed on a *zarī* cloth, is tied with a breastband. Painting, Patiala school, Punjab, early 19th century A.D. (National Museum, New Delhi Collection)



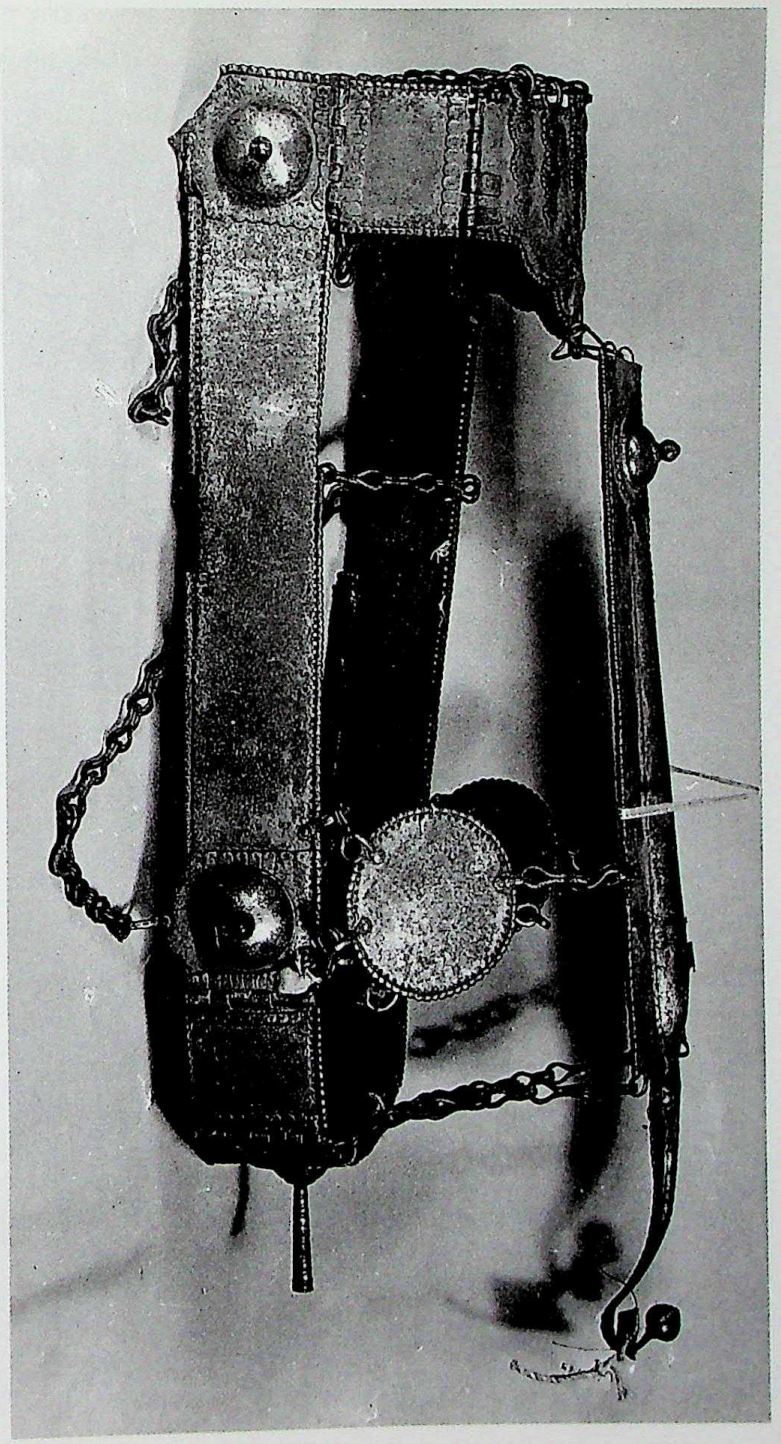
Pl. XXXVI — A saddled horse whose upper half is protected with fabric armour. The saddle and its stirrups are tastefully ornamented. Painting, Deccani *Rāgamālā*, mid. 19th century A.D. (National Museum, New Delhi Collection)



Pl. XXXVII — Frontale for the forehead of the horse. Made of one piece of metal it bears a mid-rib and is padded from inside. Mughal, 17th century A.D. (National Museum, New Delhi Collection)



Pl. XXXVIII — Frontale for the forehead of the horse, inside is padded. Mughal, 17th century A.D. (National Museum, New Delhi Collection)



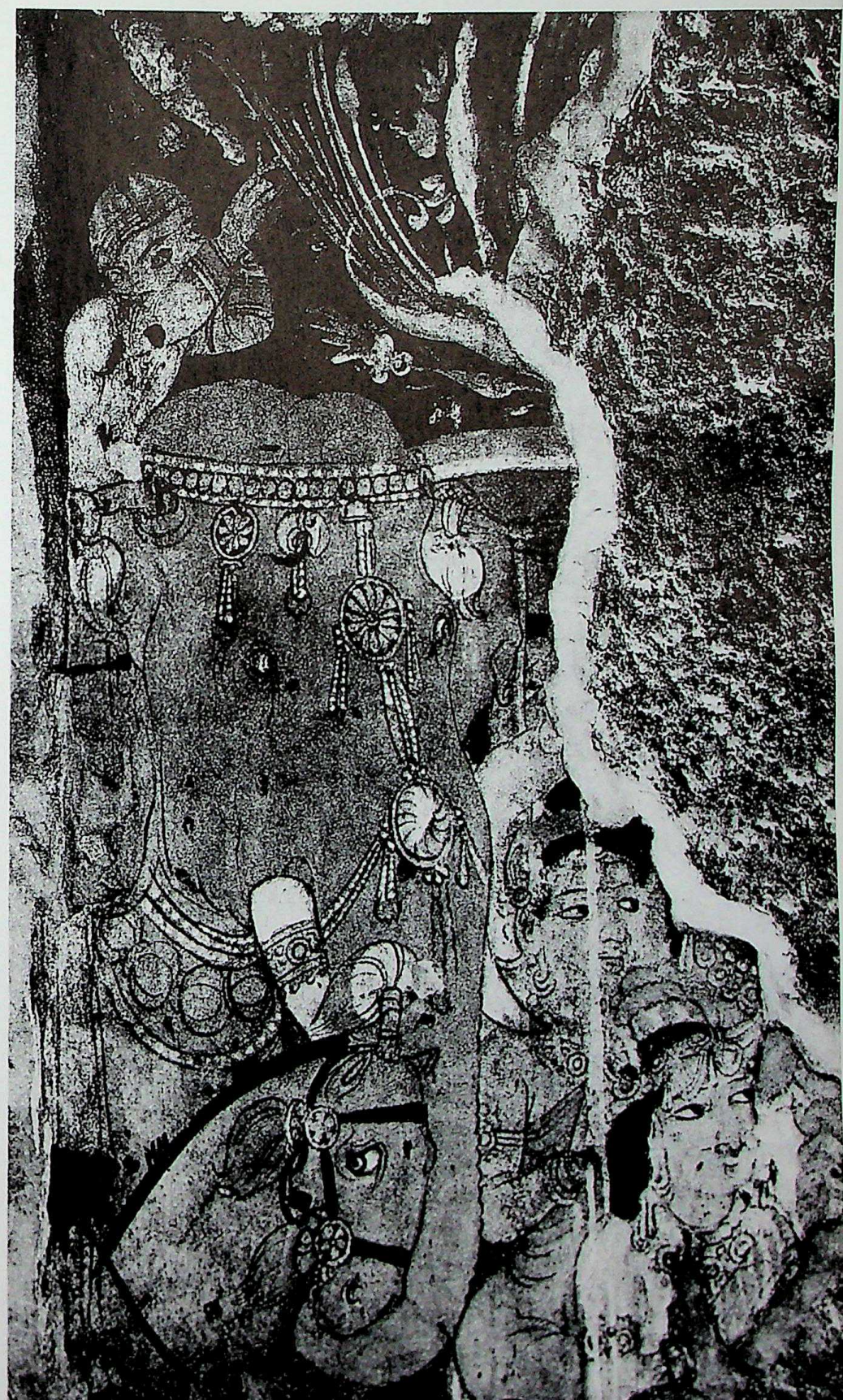
Pl. XXXIX — Complete frontale. It protected the forehead and both the cheeks of the horse. With the help of small chains this armour was placed on the head of the horse. Metal, Mughal, 17th century A.D. (National Museum, New Delhi Collection)

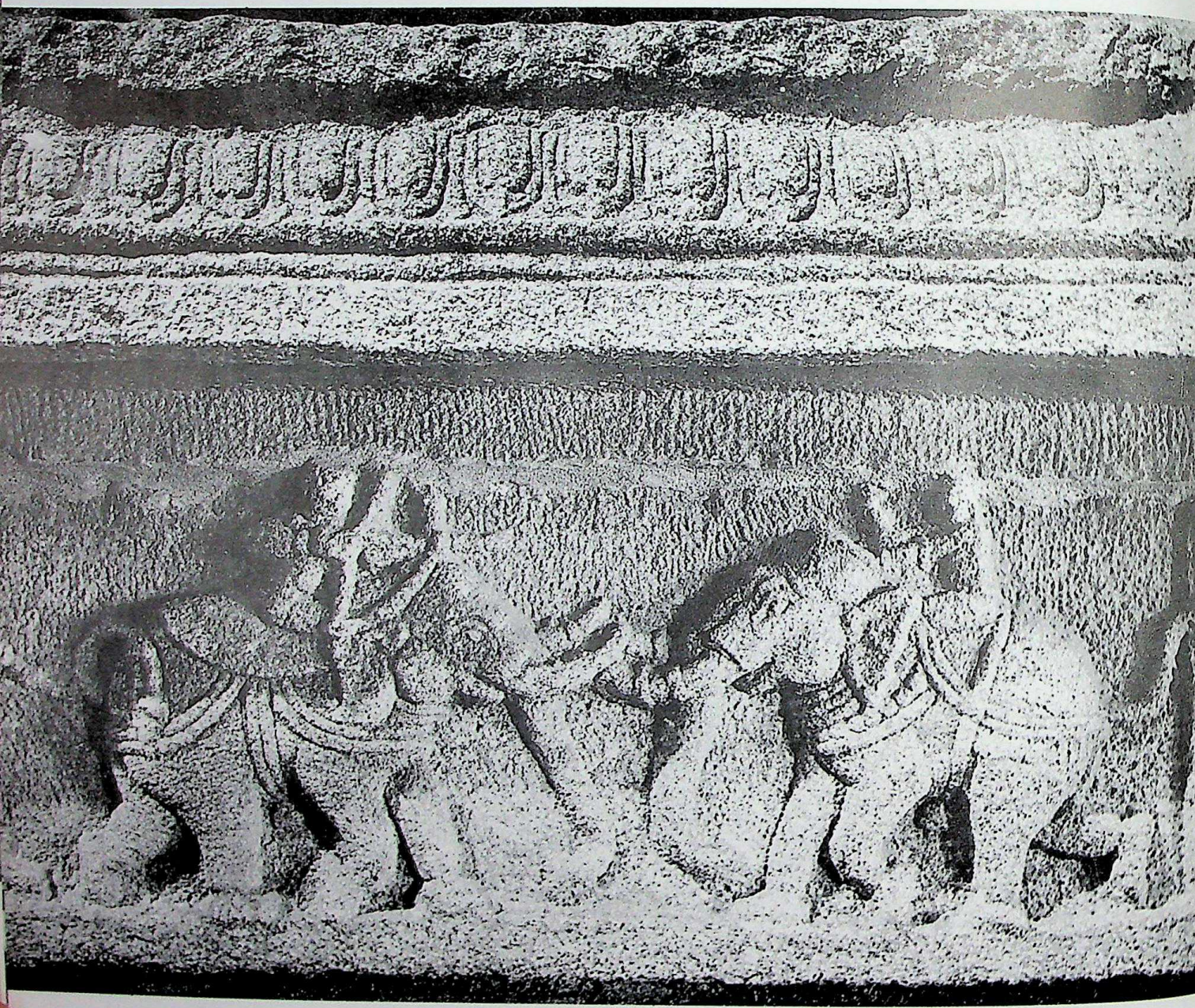
Pl. XL — A stone medallion depicting an elephant with two riders, one of them holding an elephant-goad. A *jhool* is tied with a breastband. Bharhut, Shunga period, 2nd century B.C. (Archaeological Survey of India, New Delhi)

Pl. XLI — Two riders on an elephant, one is holding an elephant-goad. A *jhool* is tied with a rope. Stone, Sātavāhana period, 18th century A.D. (National Museum, New Delhi Collection)

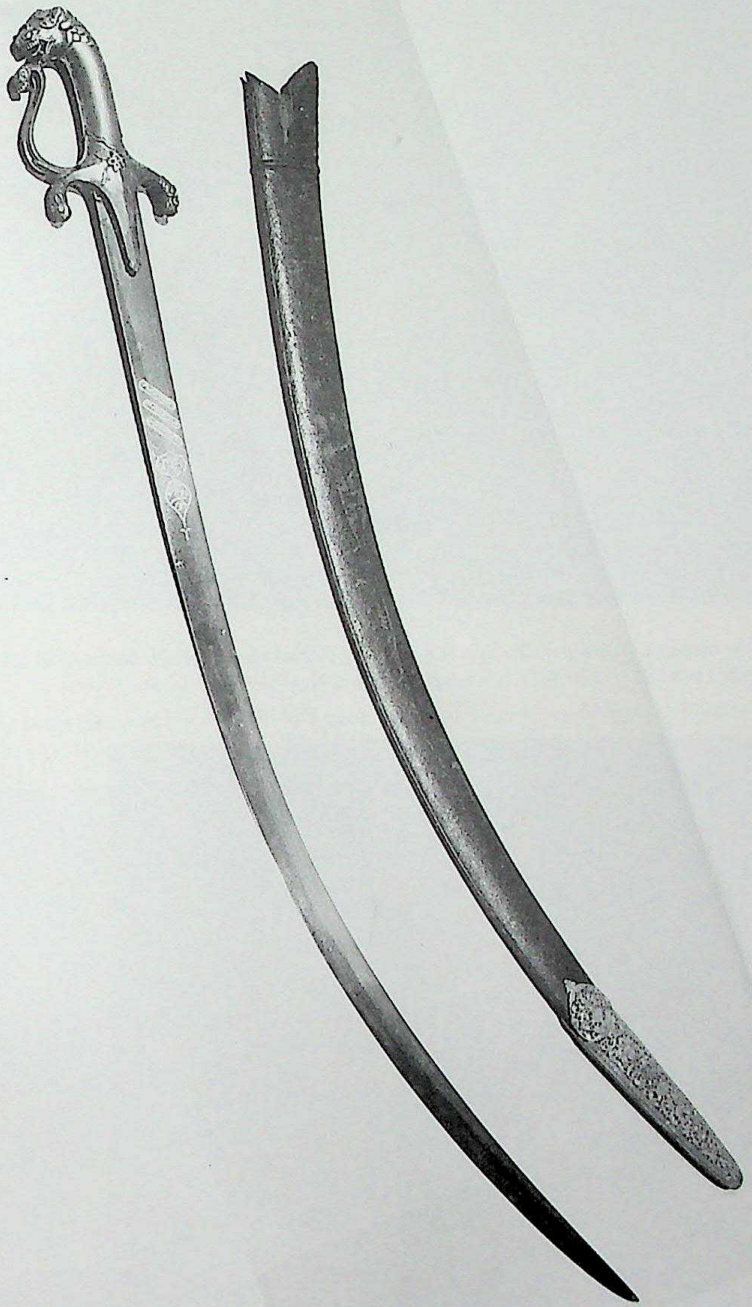
Pl. XLII— A wall painting depicting the attack on Simhala (Sri Lanka). The elephants with their riders inside the *howdah* are crossing a river on boats, Ajantā, Maharashtra, Vākāṭaka period, 5th century A.D. (Archaeological Survey of India, New Delhi)

Pl. XLIII — Ornamented elephant and horse depicted in the wall painting, Ajantā, Maharashtra, Vākāṭaka period, 5th century A.D. (Archaeological Survey of India, New Delhi)

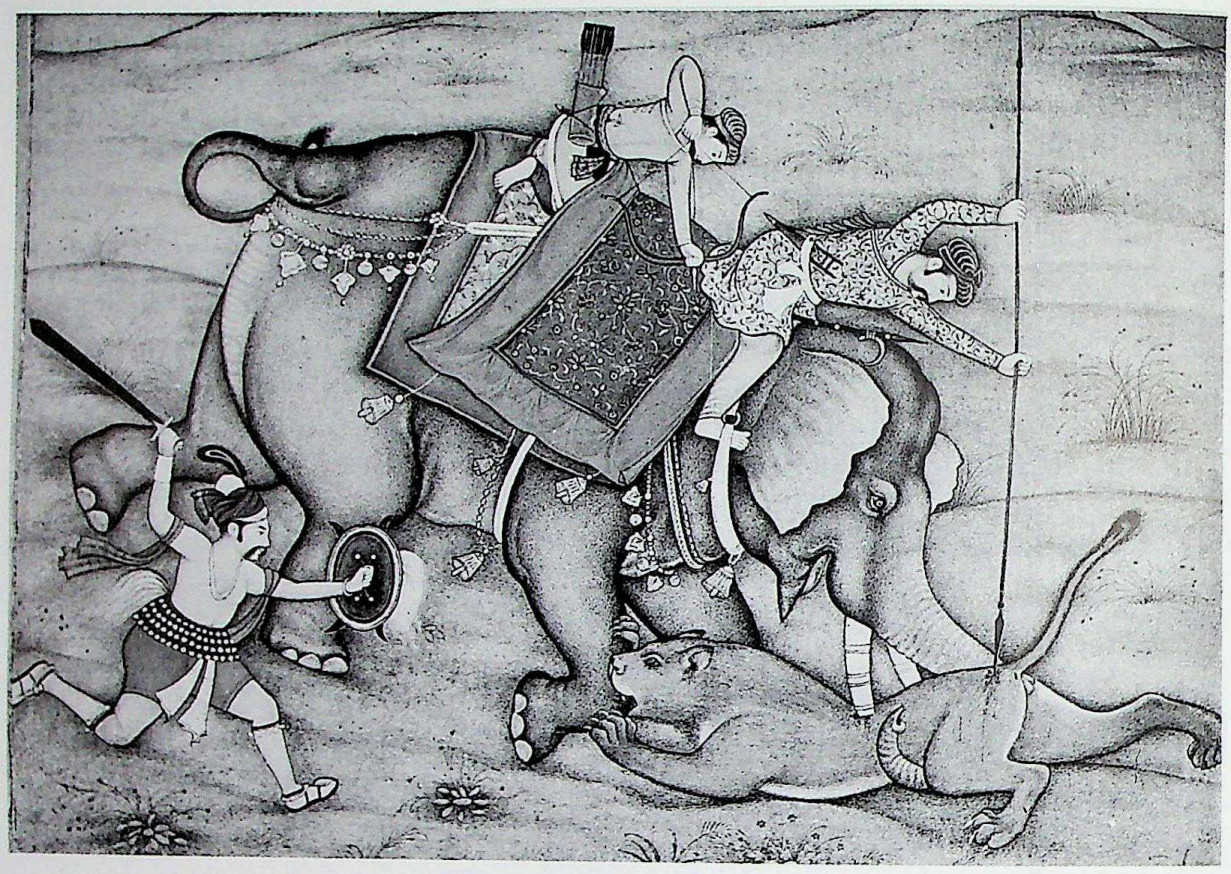




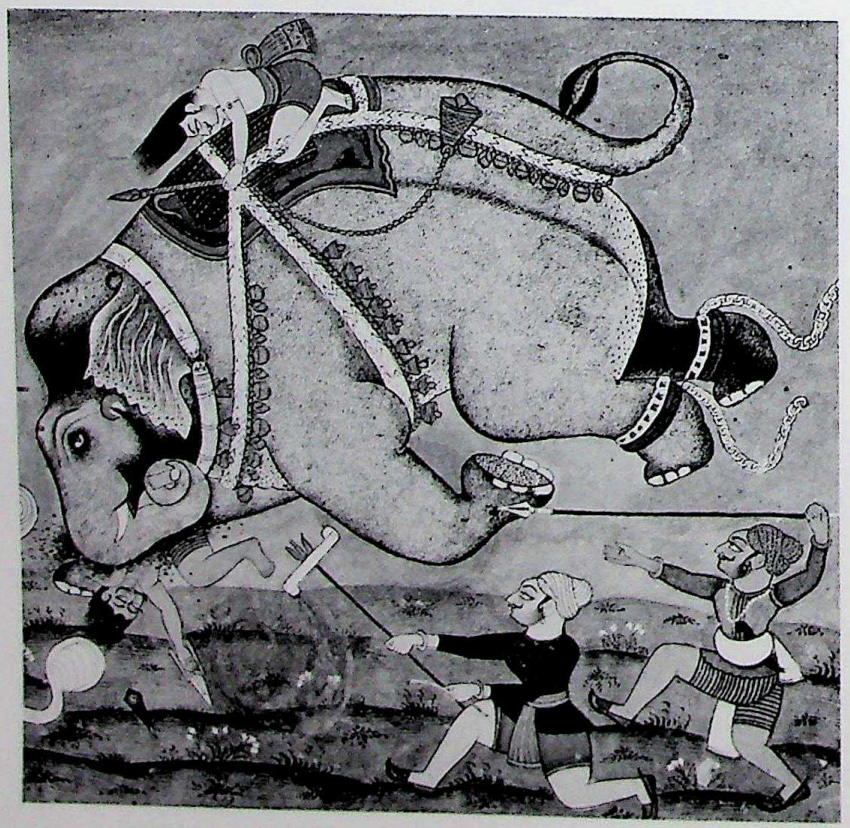
Pl. XLIV — Elephant fight. From a stone panel in Achyutarāya temple at Hāmpi in Karnataka, 15th century A.D. (Archaeological Survey of India, New Delhi)



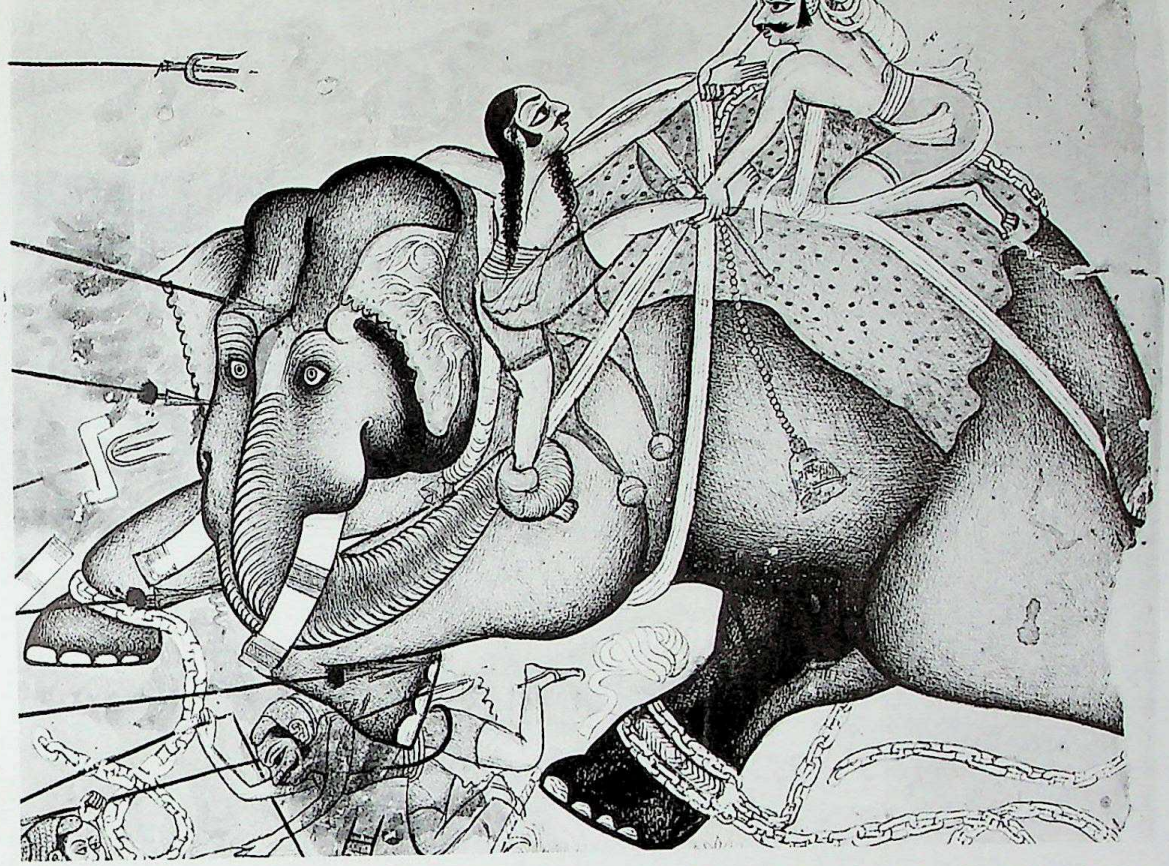
Pl. XLV — *Shamshīr,* Damascus steel blade, inscribed.



Pl. XLVI — An elephant fighting with a lion. the elephant is decked with *jhool,* ornamental bells and tusk protector. Painting, Mughal school, *c.* 1620 A.D. (National Museum, New Delhi Collection)

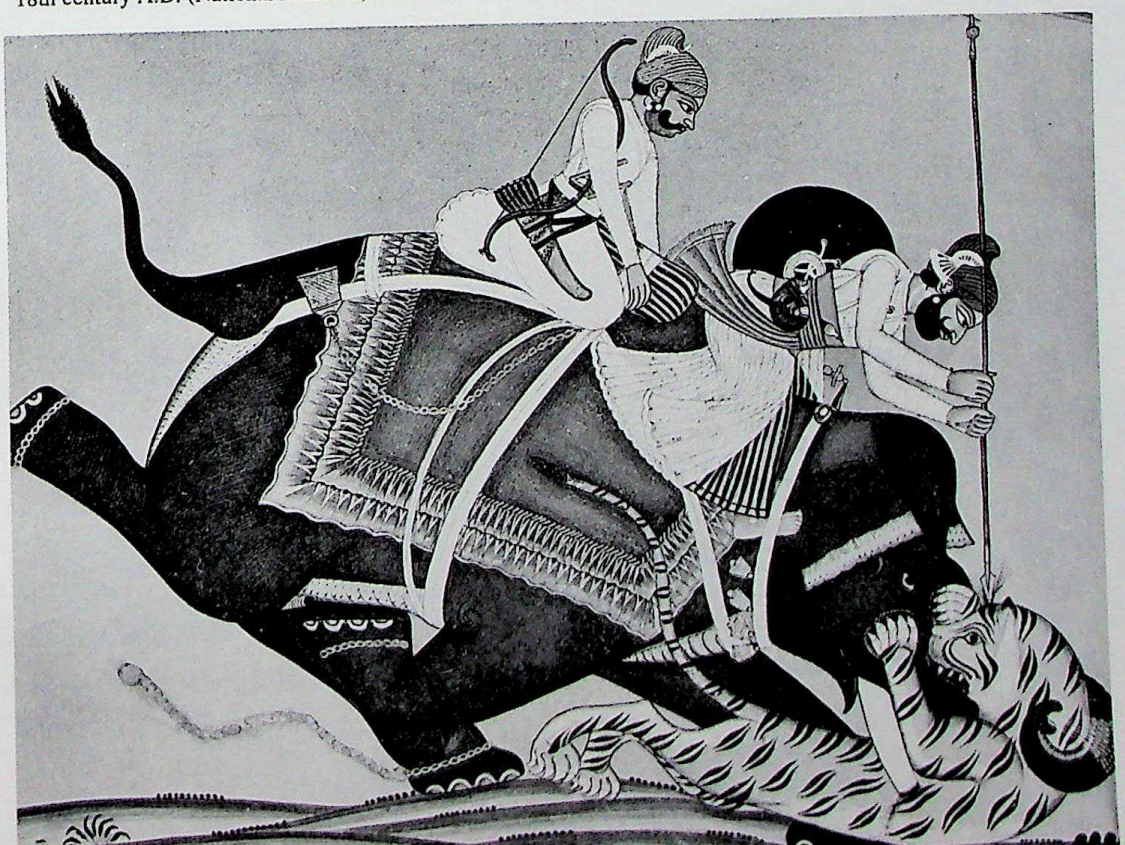


Pl. XLVII — An elephant went amuck; he broke his chains, overthrew his *mahāut* and is on the way to create havoc. Noteworthy is a special trident-like weapon employed by one foot-soldier to control the wild animal. Painting, Kota, Rajasthan, mid. 18th century A.D. (National Museum, New Delhi Collection)

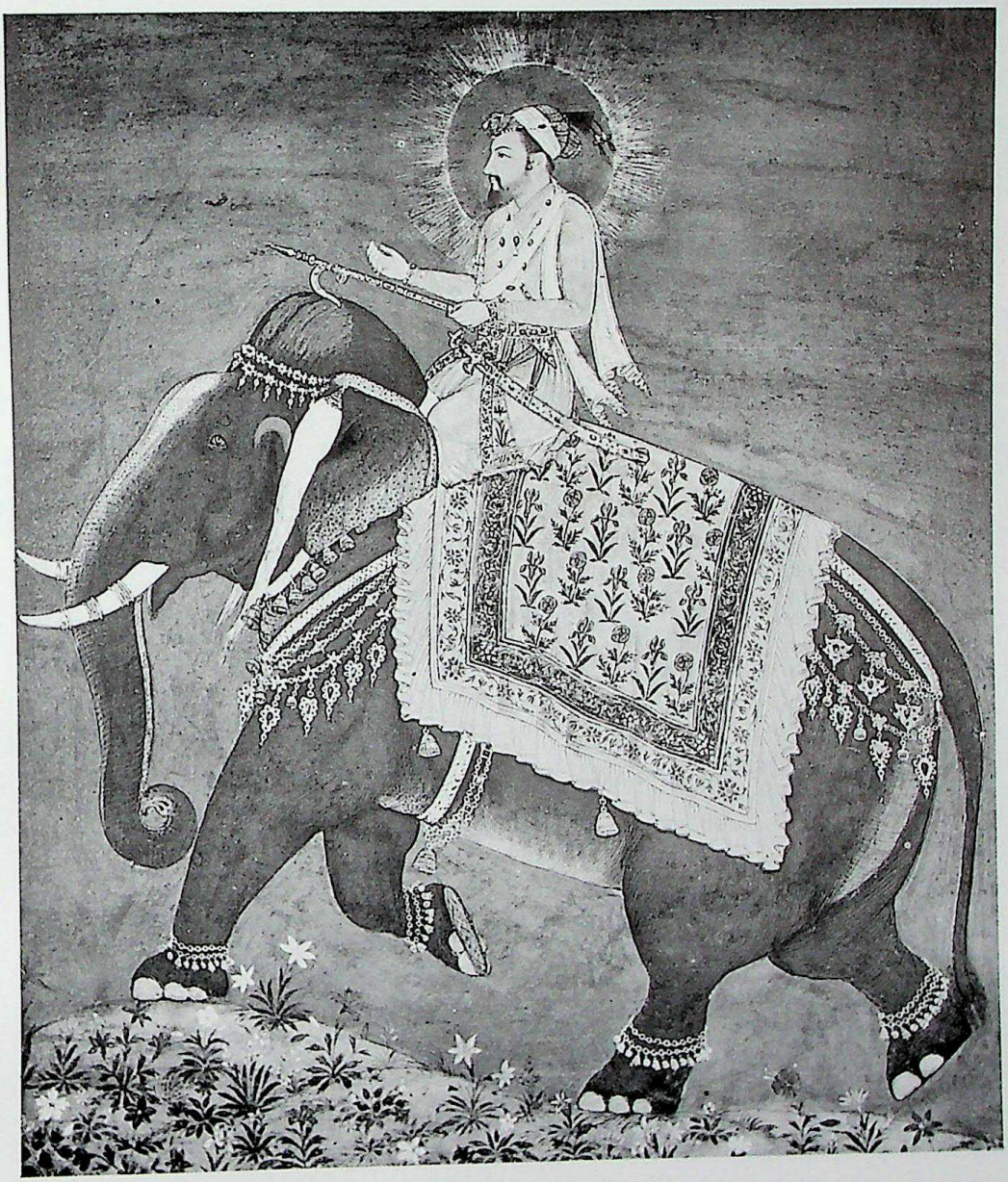


Pl. XLVIII — An elephant went amuck, broke his chains and crushed his *mahāut*. Several spears, tridents and javelins are hurled to control the wild animal. Painting, Kota school, Rajasthan, mid. 18th century A.D. (National Museum, New Delhi Collection)

Pl. XLIX — A hunting scene, an elephant attacked by a tiger. Elephant is covered with a *jhool*. Painting, Rajasthan, 18th century A.D. (National Museum, New Delhi Collection)



Pl. L — An elephant decked with a *jhool*, ornamented with bells, tusk protector and forehead protector. Painting (National Museum, New Delhi Collection)

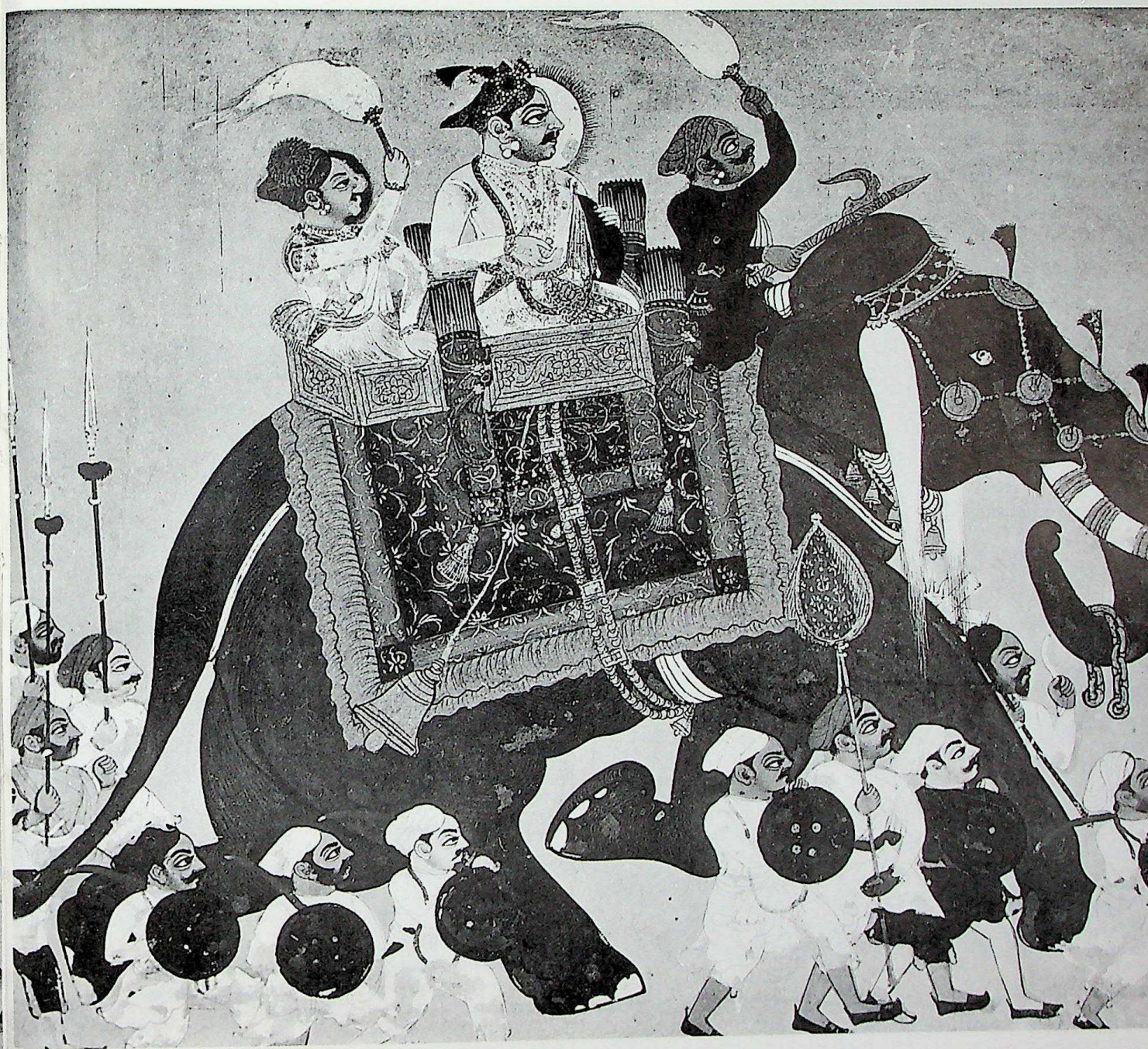


Pl. LI — Shāh Jahān riding an elephant. The elephant is ornamented with tusk protector, *jhool*, necklaces and other ornamental devices. Anklets are seen on all his four feet. the emperor, without a *howdāh,* is himself guiding the animal with an elephant-goad. Painting, Mughal, *c.* 1650 A.D. (National Museum, New Delhi Collection)

Pl. LII — War musicians on elephant, camel and horses. A kettledrum is placed inside the *howdāh*. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

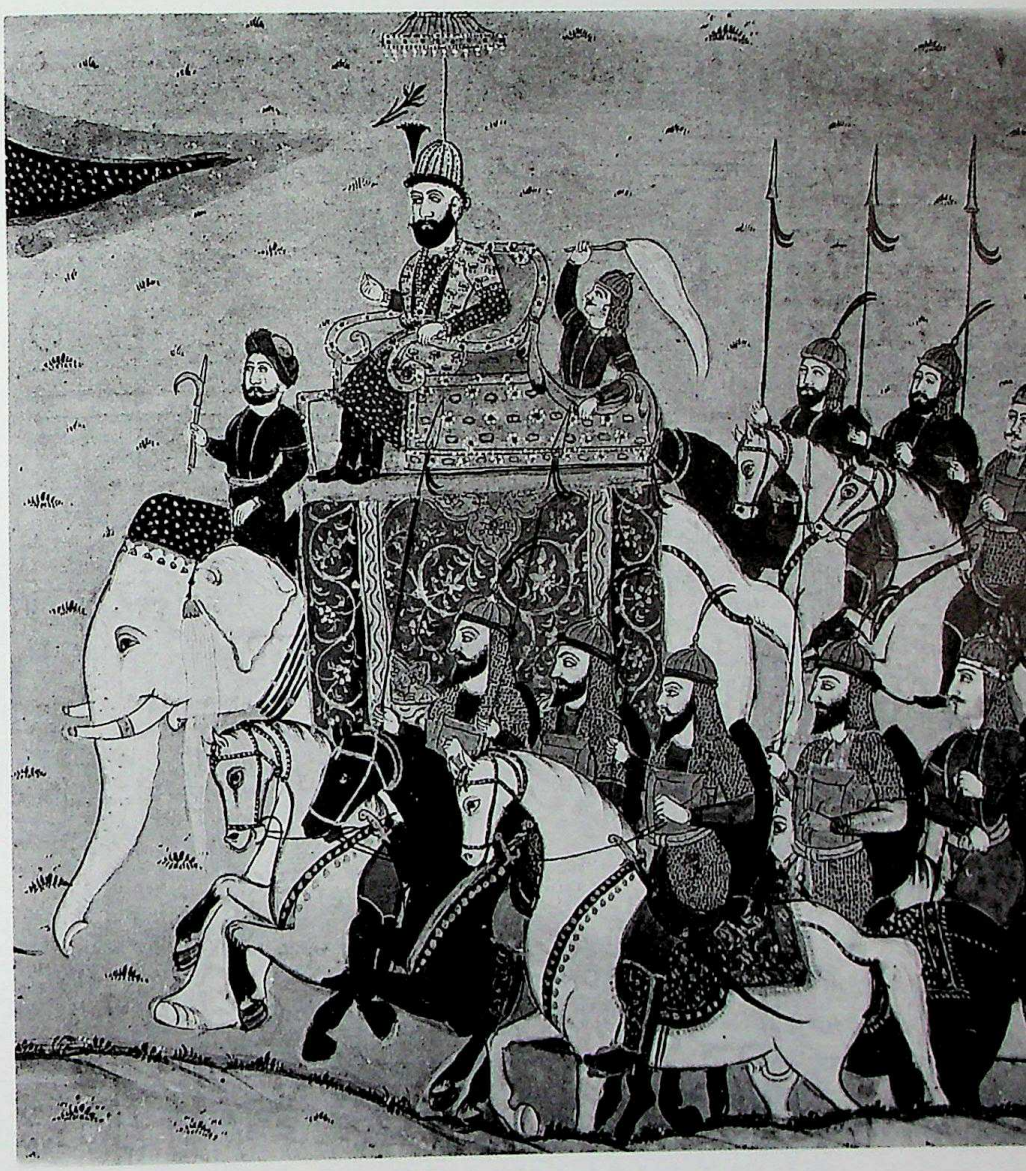
Pl. LIII — A prince riding a cap-fringed [illegible] is [illegible] deck [illegible] *hawdāh* is ornamented. Several soldiers surround the prince. Painted, Rajasthan, 18th century A.D. National Museum, New Delhi Collection.

Pl. LIV — A hunting scene. A prince, seated on a small *howdāh* is shooting at a tiger with his matchlock gun. The *mahāut* holds an elephant-goad while another rider carries a bow and a quiver filled with arrows. Painting, Kota, *c.* 1730 A.D. (National Museum, New Delhi Collection)



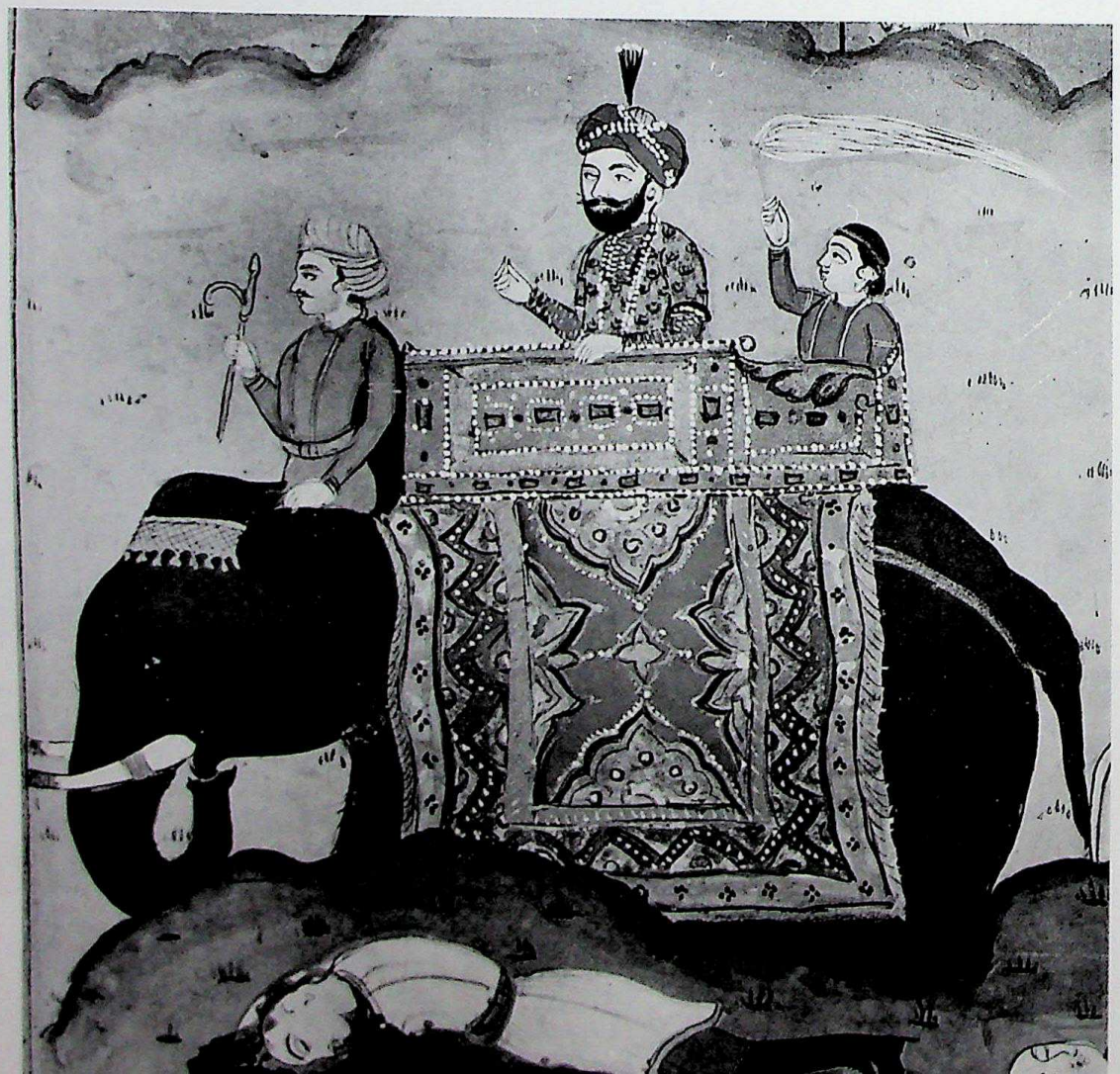
Pl. LV — A prince riding an elephant inside a *howdāh*. The animal is ornamented with tusk protector, *jhool*, bells, necklaces and other ornamental devices. Several quivers filled with arrows are fastened with the *howdāh*. Painting, Rajasthan, 18th century A.D. (National Museum, New Delhi Collection)

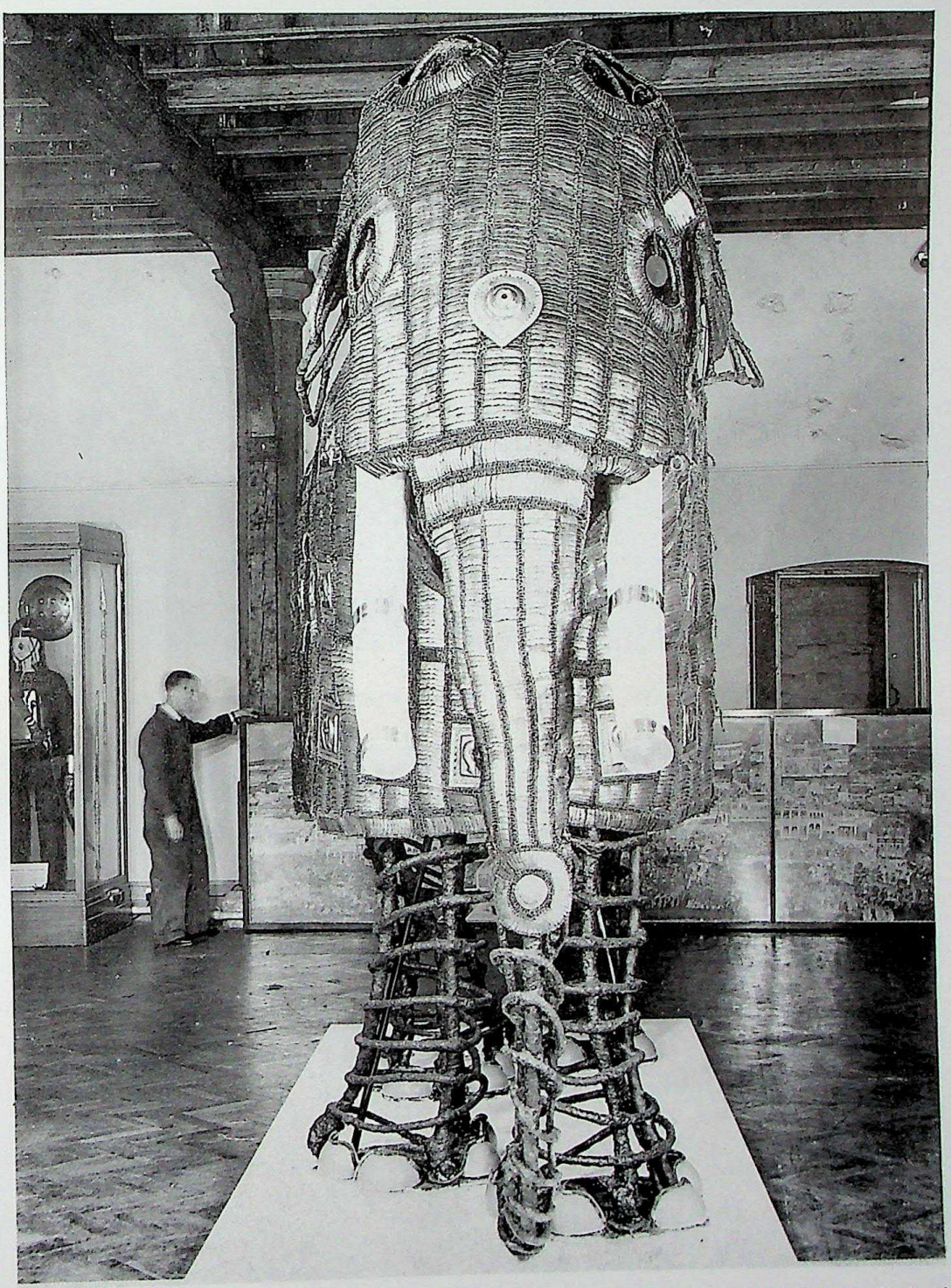
Pl. LVI — An elephant carries on its back a *jhool* and an ornamented empty *howdāh*, A *mahāut* holds an elephant-goad. Fully armoured cavaliers surround the elephant. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)



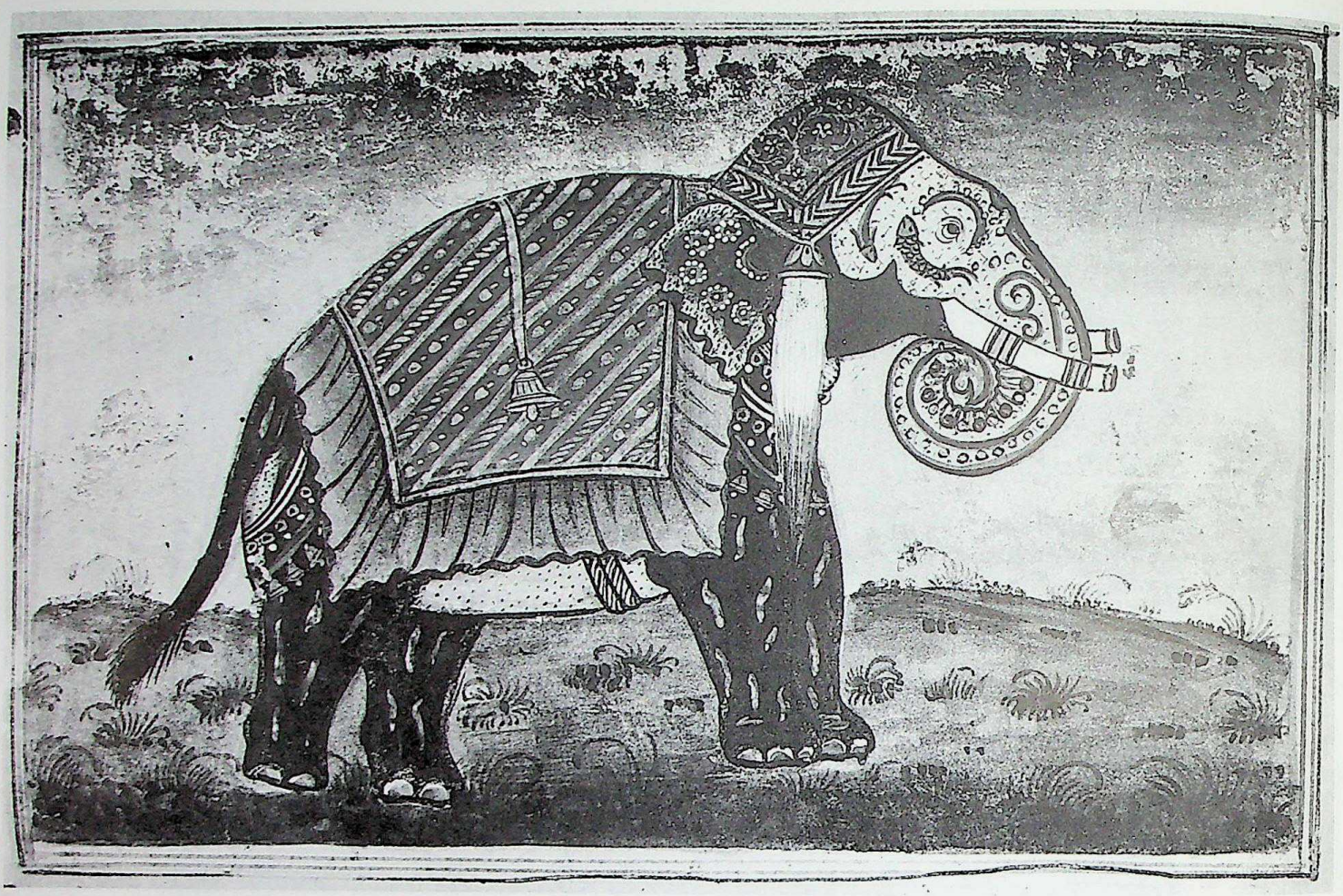
Pl. LVII — The Sultān on an unusual *howdāh* in the shape of a royal chair. The *jhool* is beautifully embroidered. The cavaliers, fully armoured, escort the Sultān. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

Pl. LVIII — The Sultān inside a rectangular, small *howdāh* divided into two sections-the back portion is occupied by a flywhisk-bearer. The fabric *jhool* is embroidered with *zarī*. From the illustrated manuscript of the *Sikandarnāmā, c.* 1800 A.D. (National Museum, New Delhi Collection)

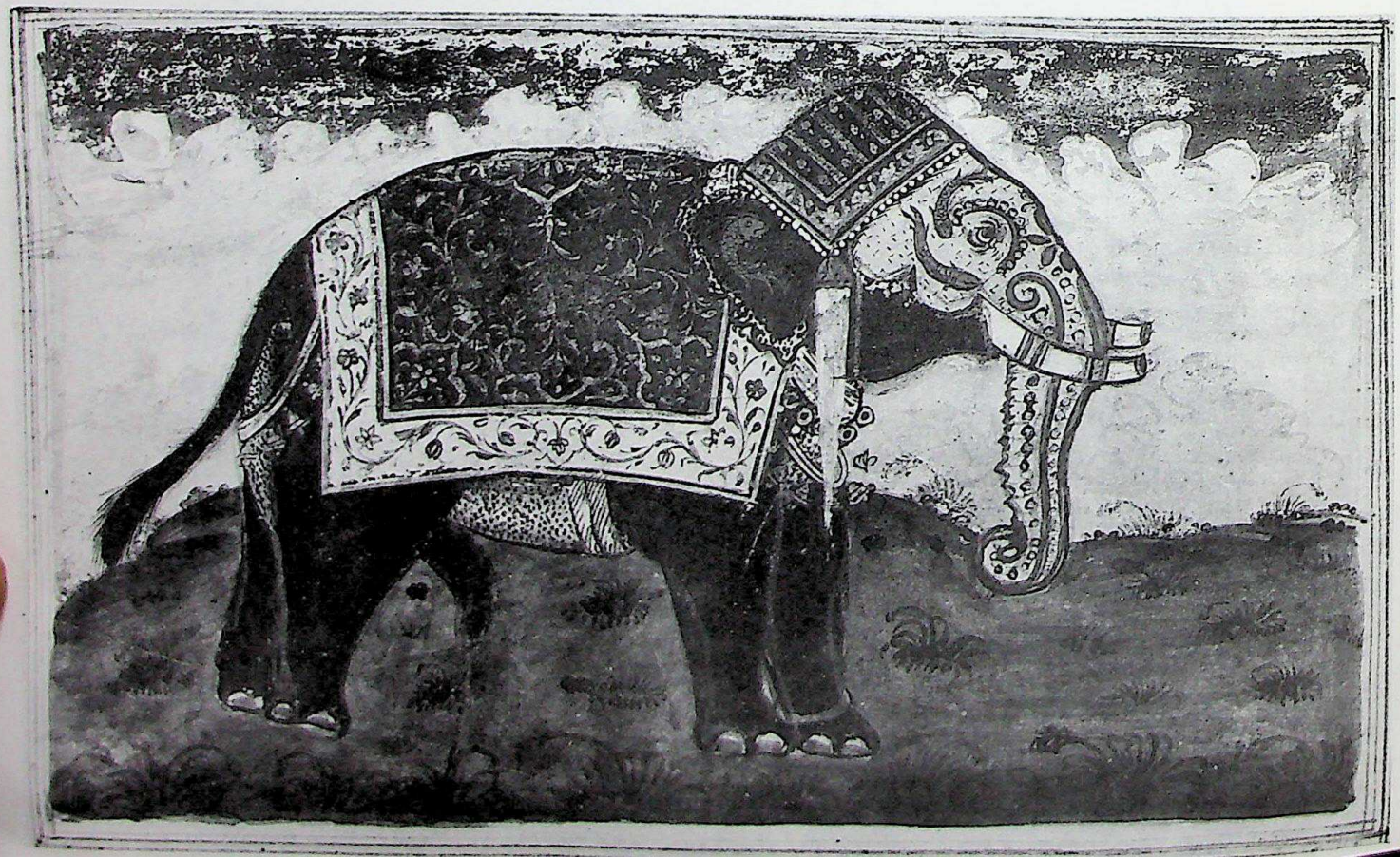


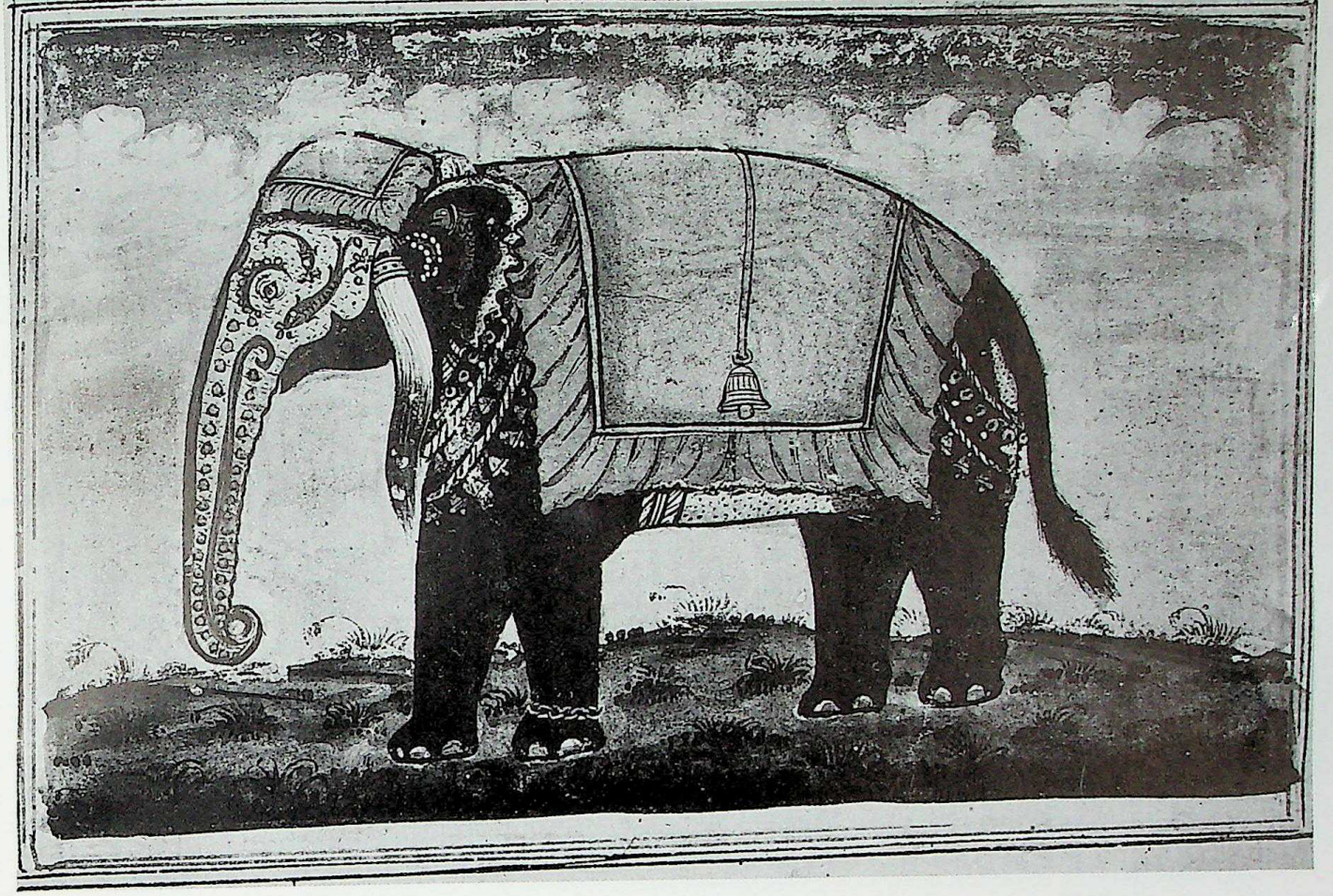


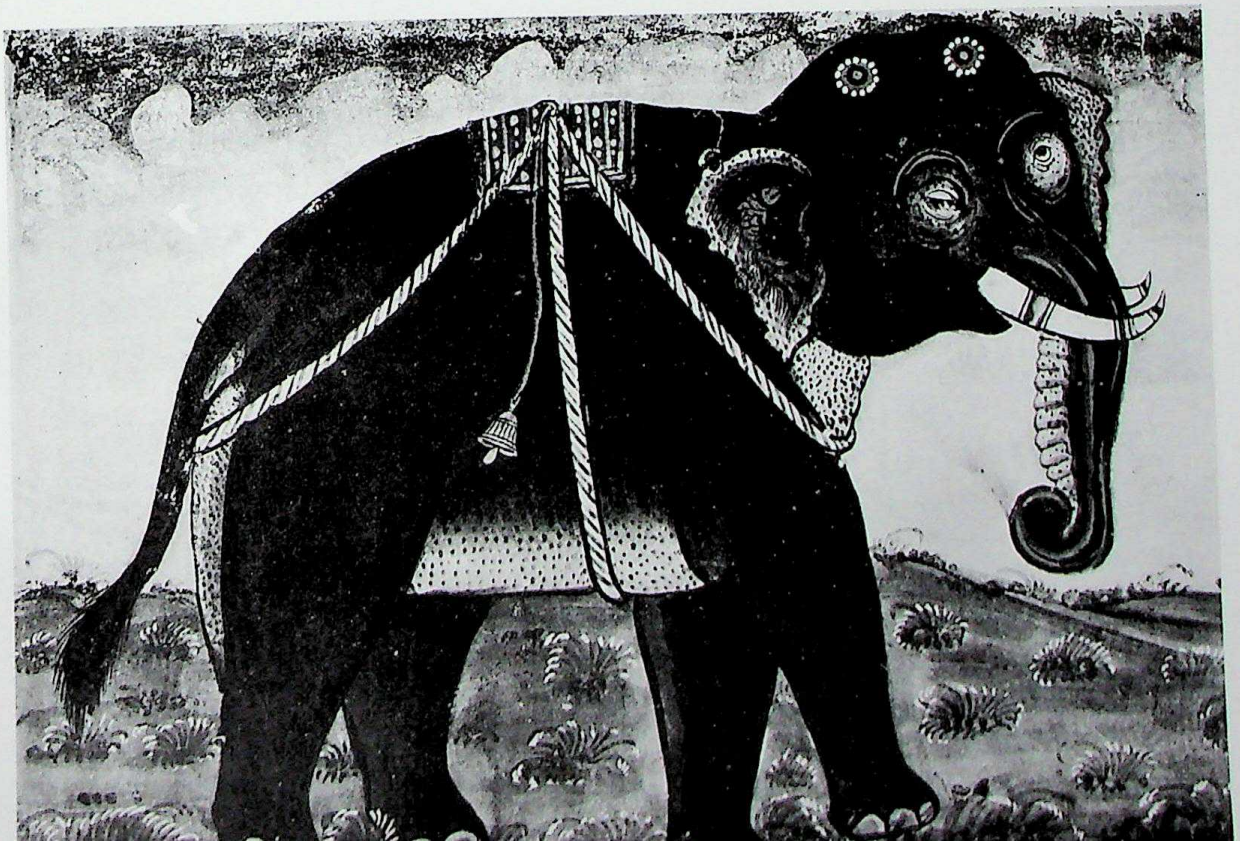
Pl. LIX — Elephant armour mounted on a dummy. It is made of lamellar and covers the entire body including forehead and trunk. 18th century A.D. (Tower of London Armouries, London)

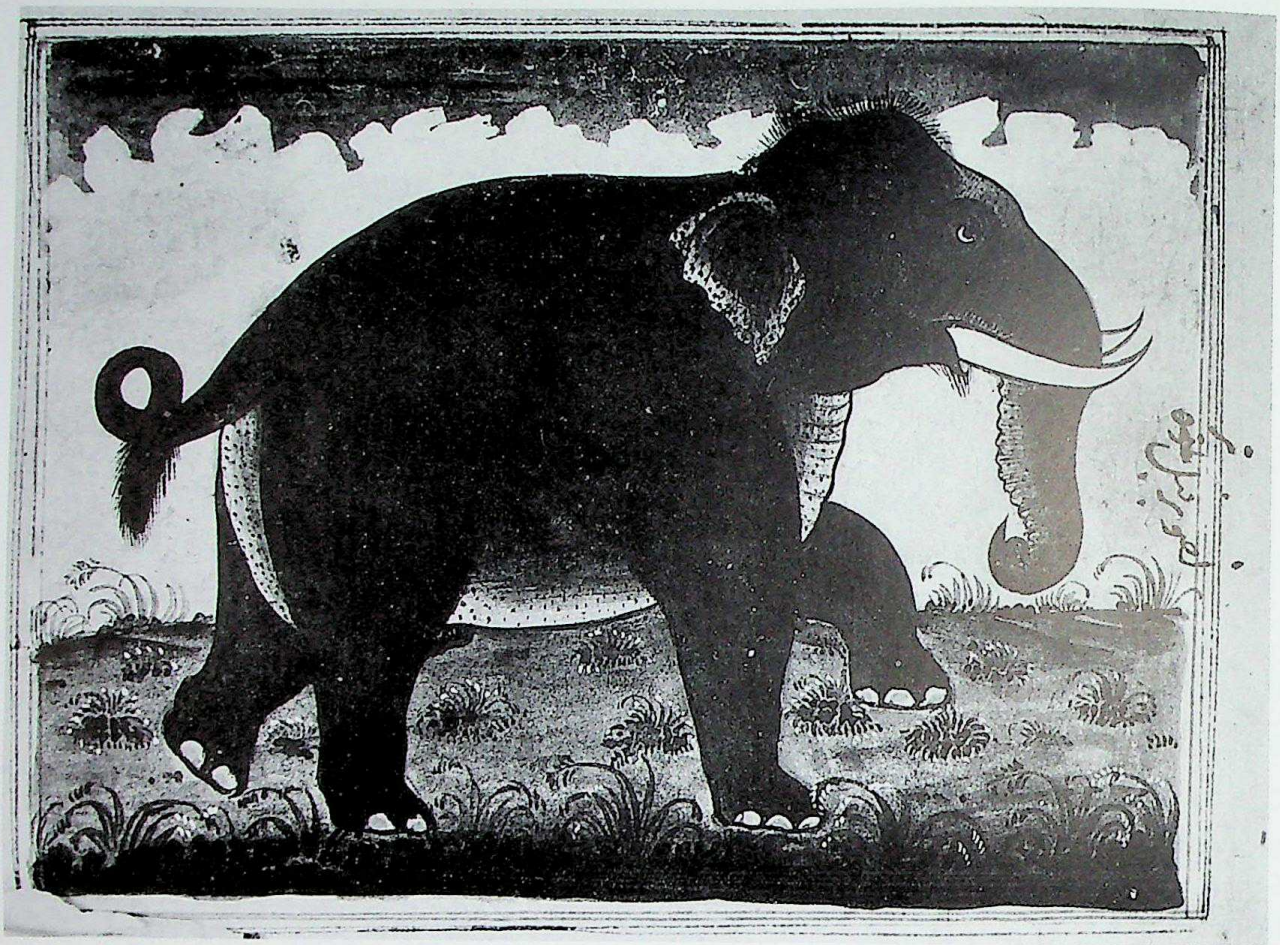


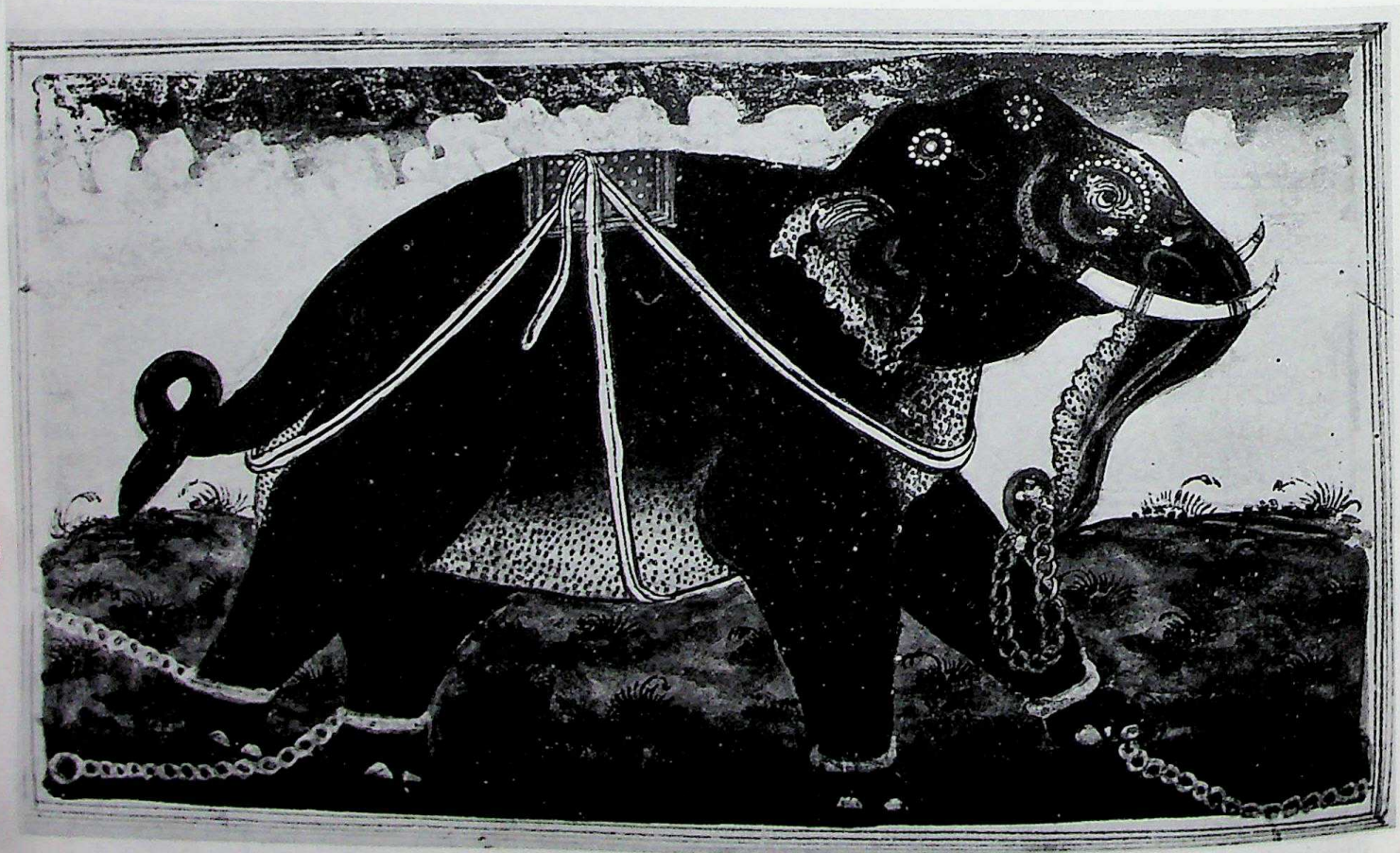
Pls. LX to LXV — Different species of war elephants. From the illustrated manuscript of the *Peelnama, c.* 1800 A.D. (National Museum, New Delhi Collection)

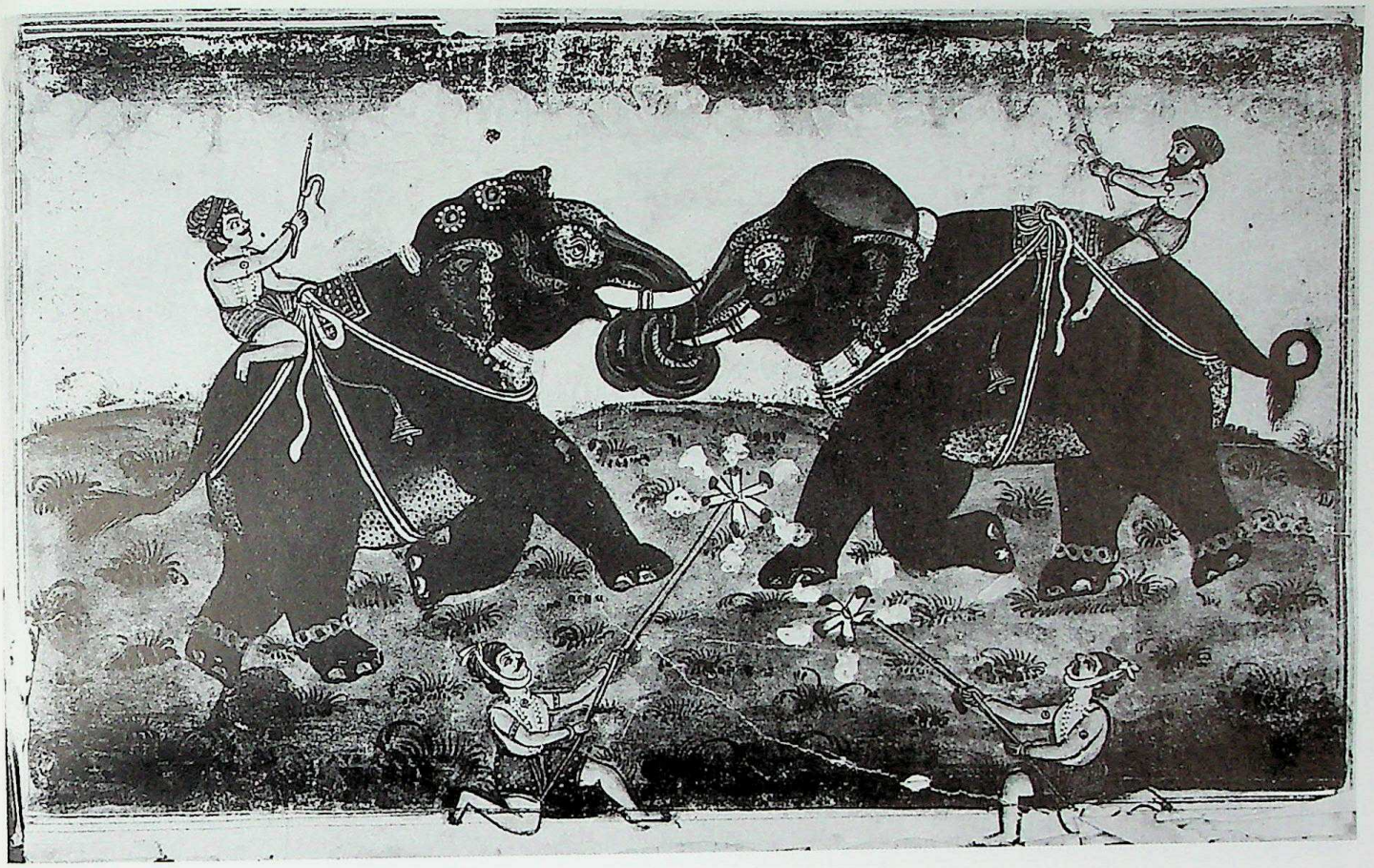




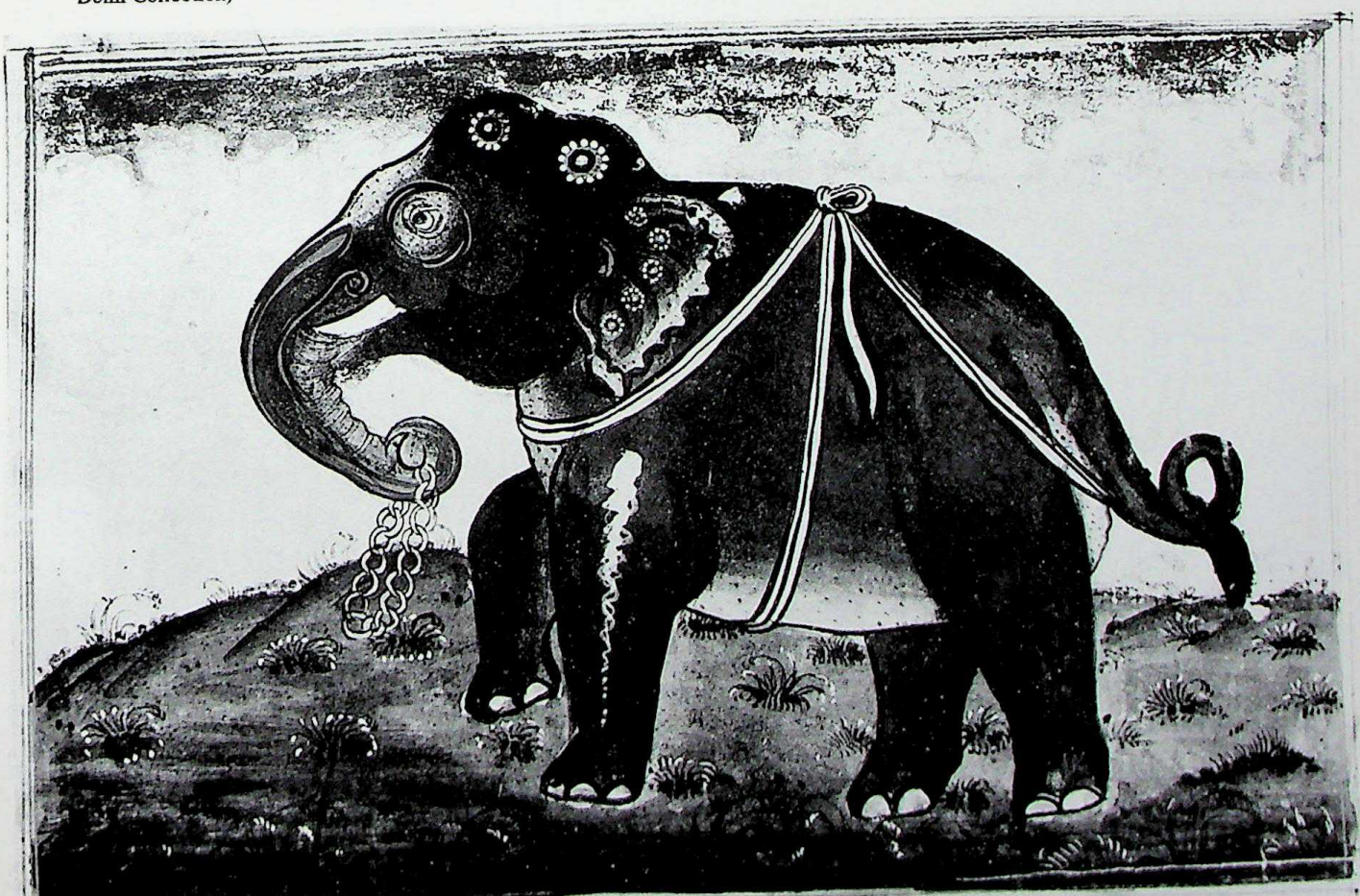


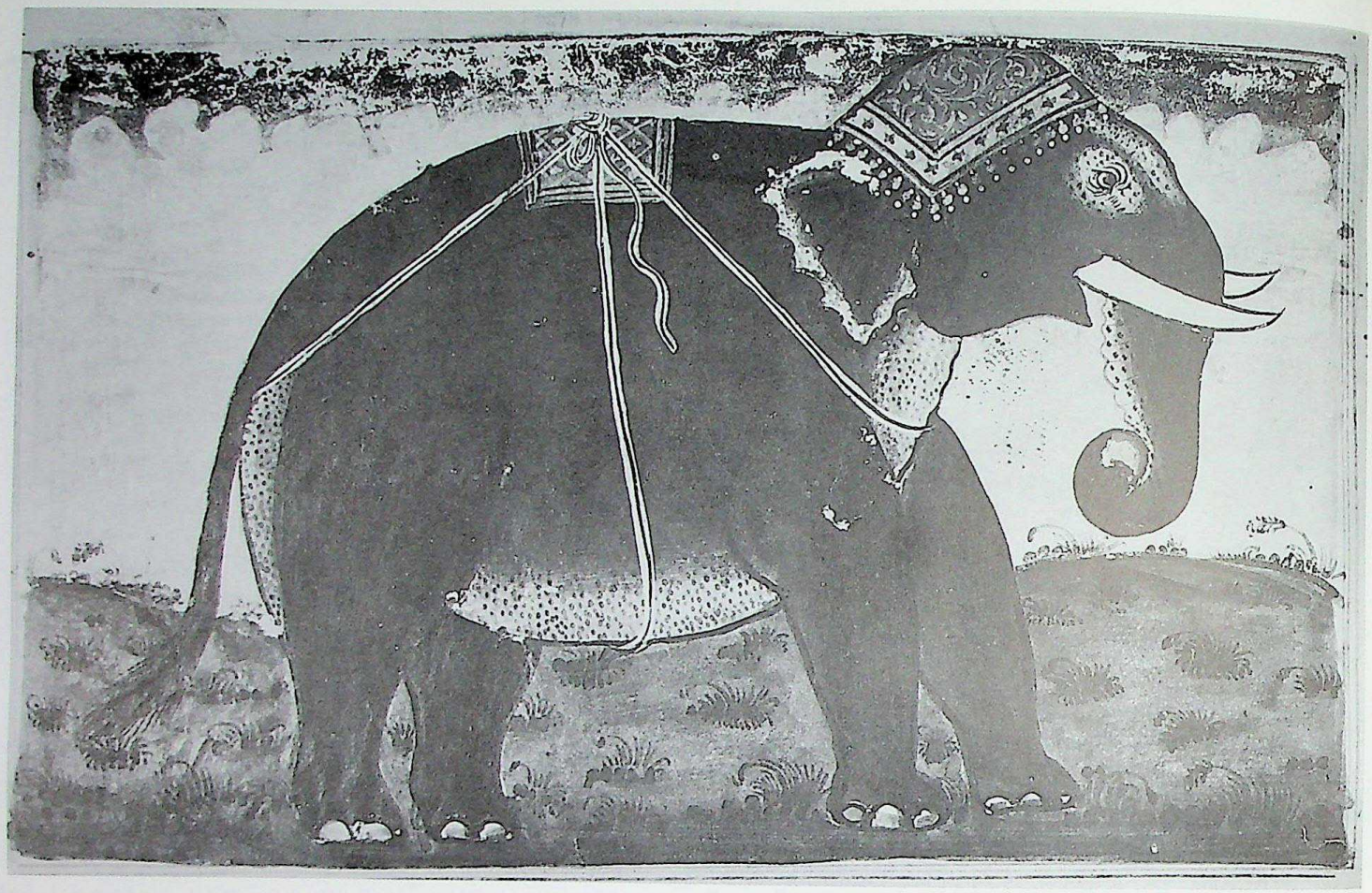


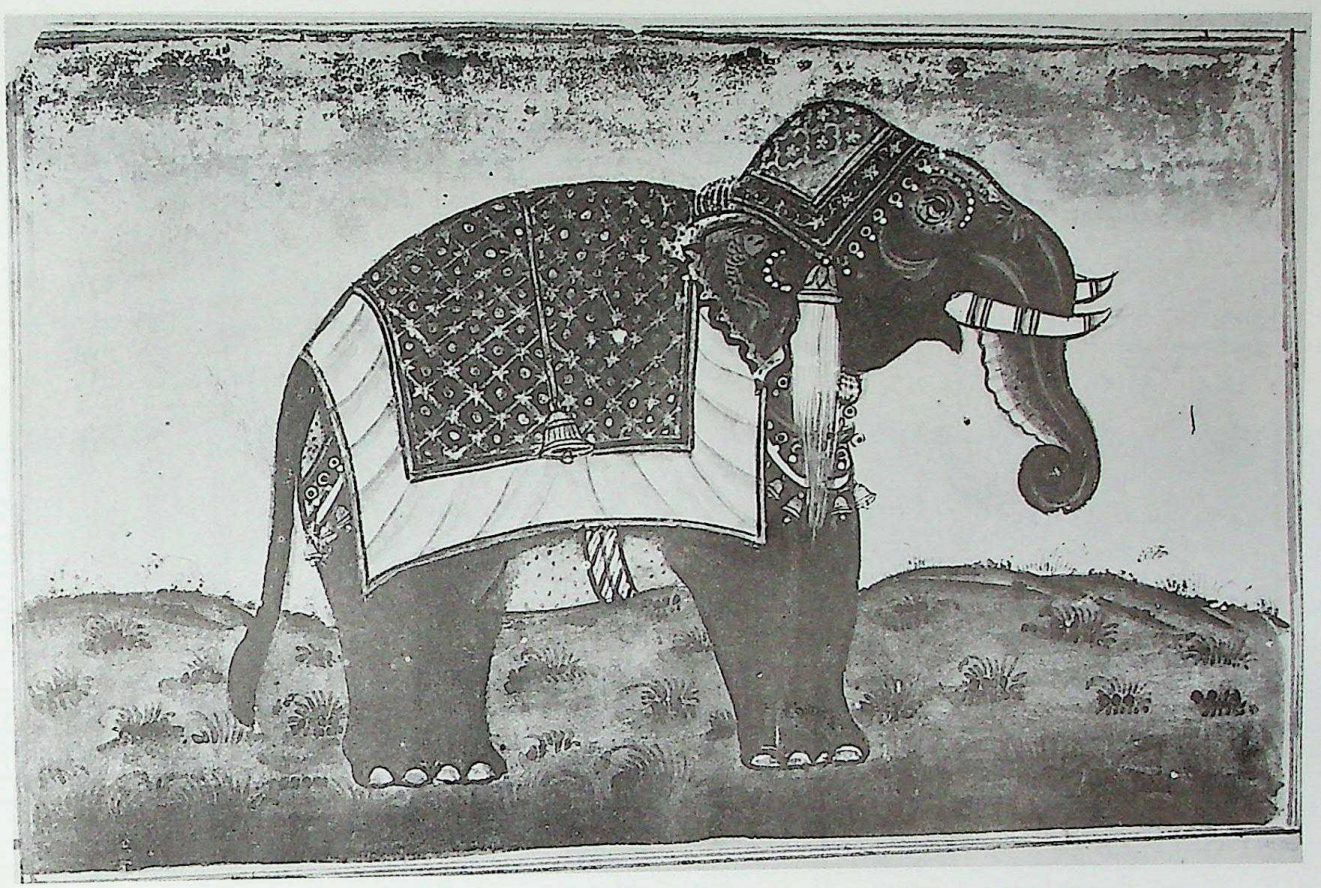


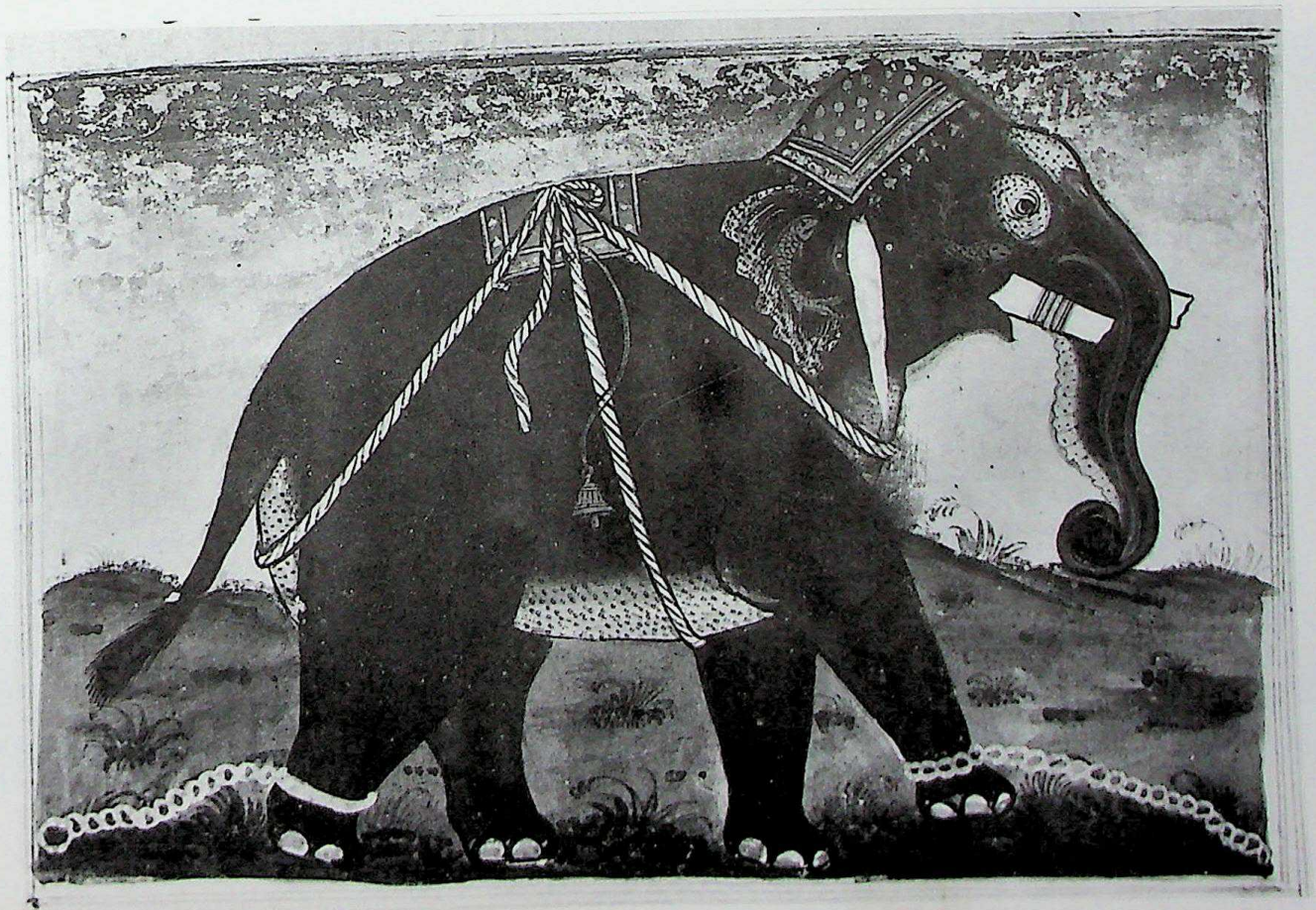


Pls. LXVI to LXXI — Different species of elephants. From the illustrated manuscript of *Peelnama, c.* 1800 A.D. (National Museum, New Delhi Collection)



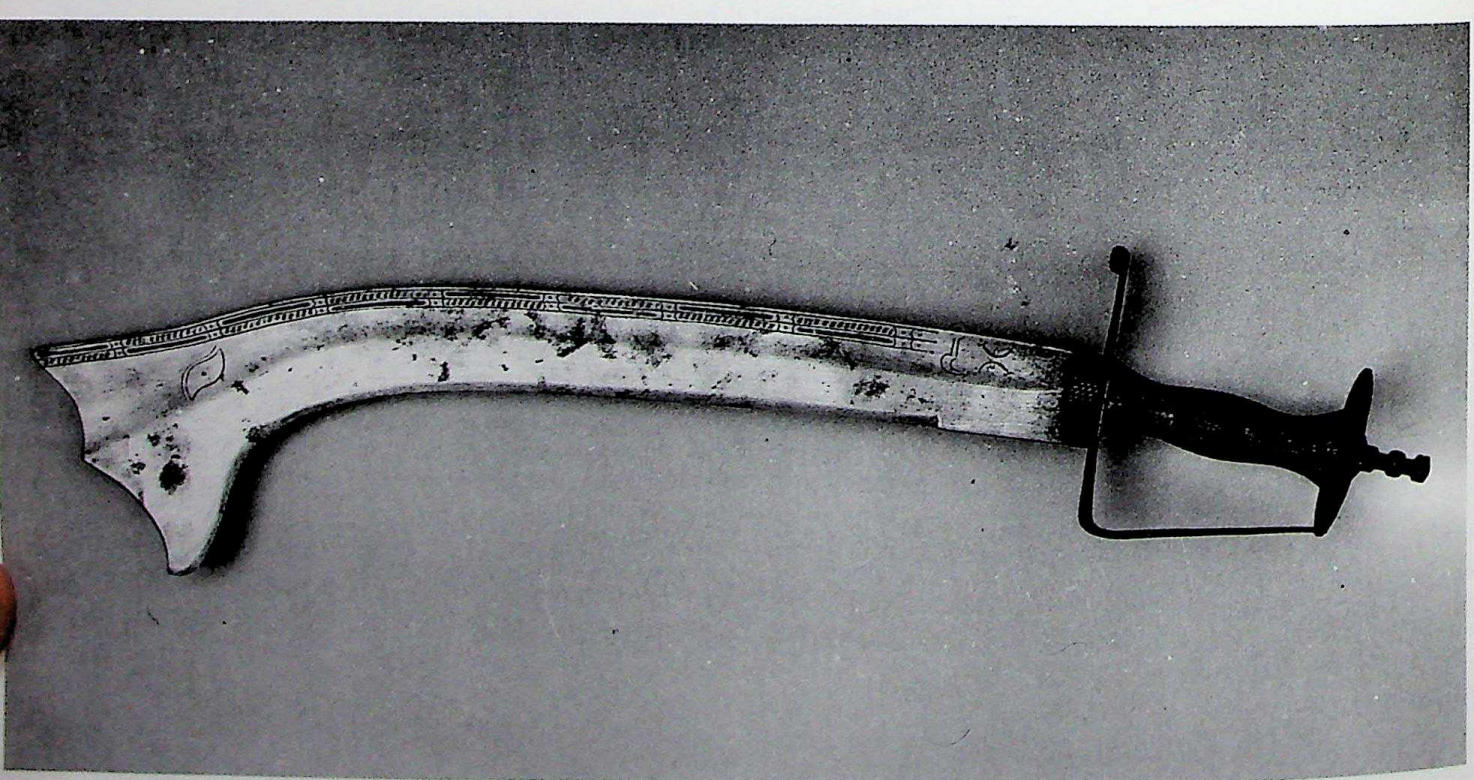




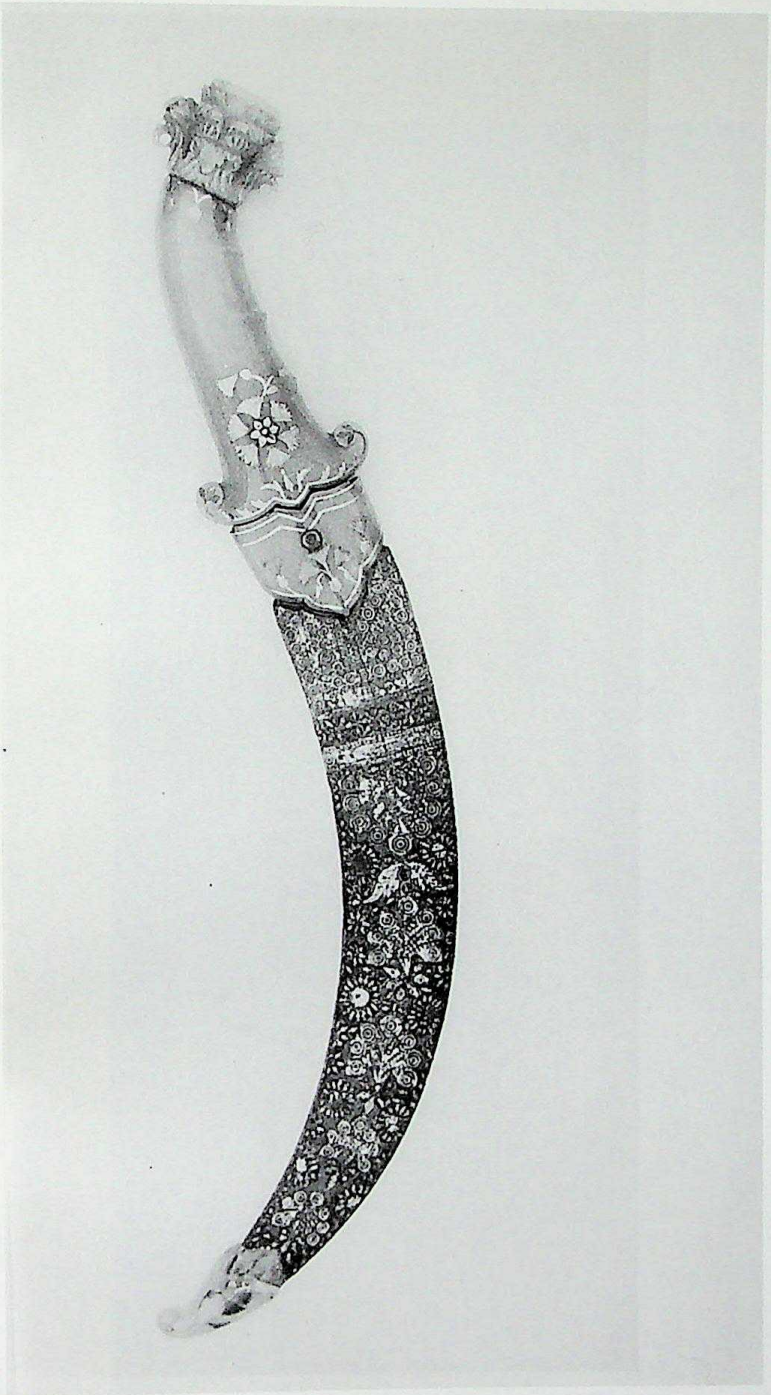


Pl. LXXII — Personal steel bow of Bahādur Shāh Jafar. It is made of two pieces and it carries, on its obverse side, verses composed by the Emperor himself, Mughal, 1857 A.D. (National Museum, New Delhi Collection)

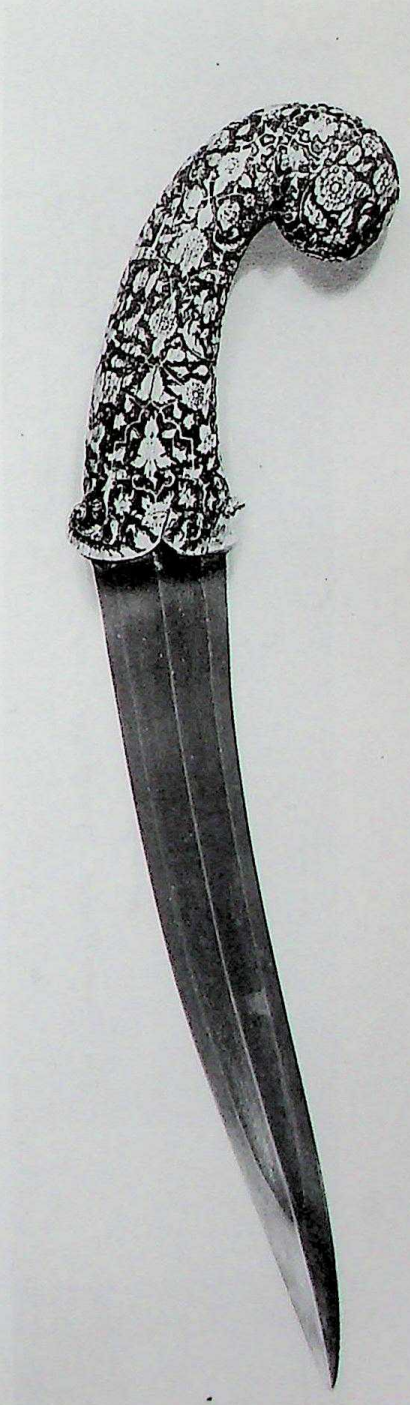
Pl. LXXIII — Close-up of Pl. LXXII showing floral design in damascened work.



Pl. LXXIV — *Korā* slightly curved with sharp edge on convex side. An eye is carved on the blade. Bengal, 18th century A.D.

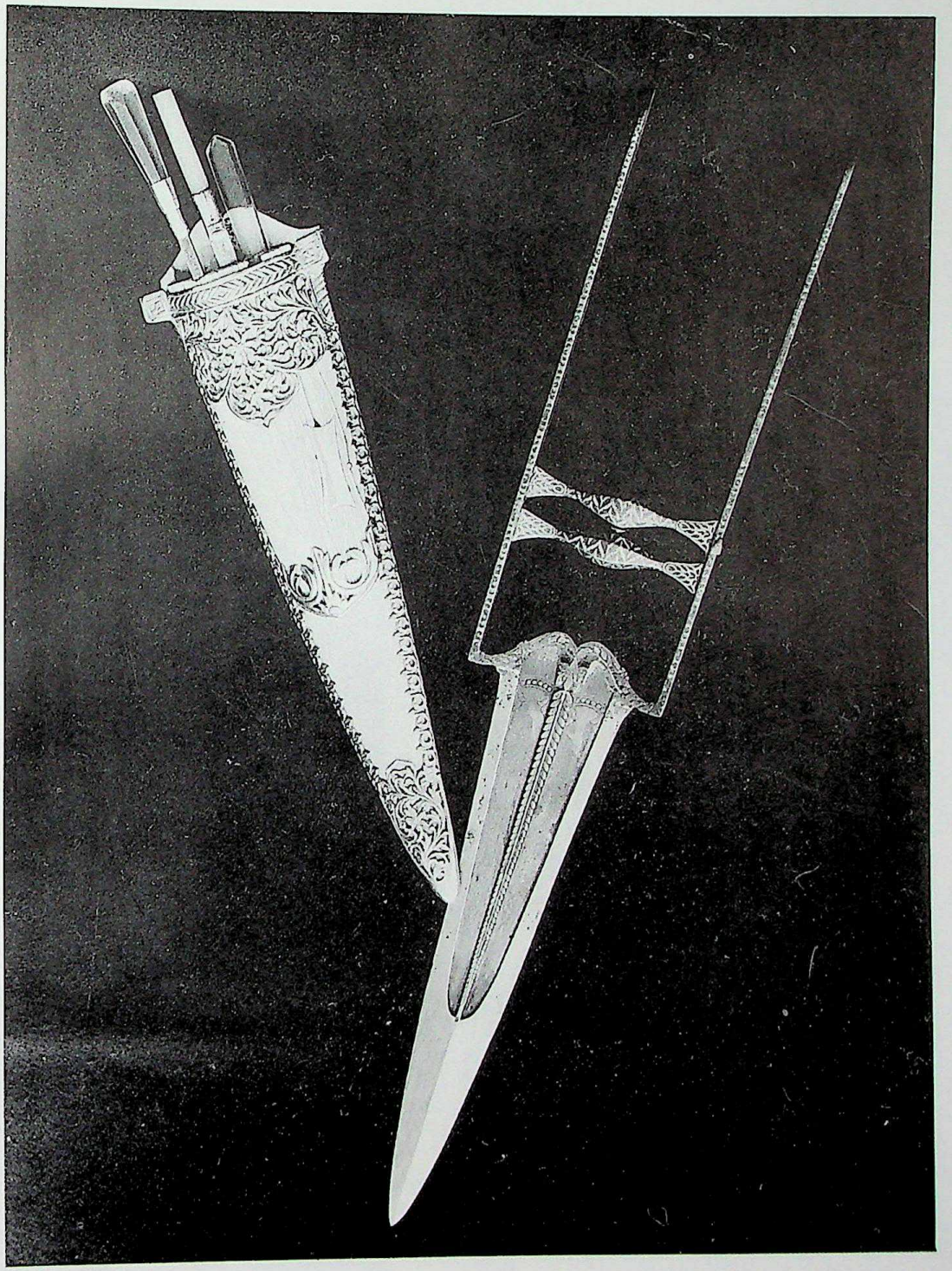


Pl. LXXV — Curved dagger, jade curved hilt shaped like a flower, Sheath is embroidered with *zarī* work. Rajasthan, 17th century A.D. (National Museum, New Delhi Collection)

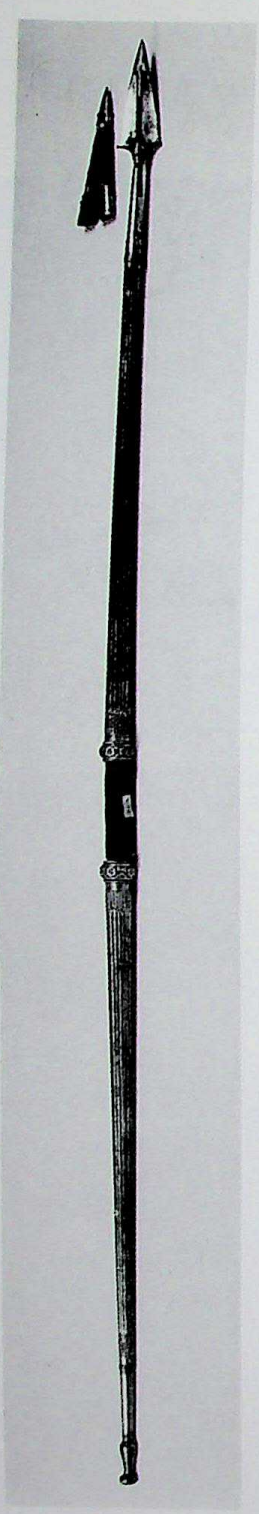


Pl. LXXVI — Dagger with ivory handle, mid. 17th century A.D. (Jagdish and Kamla Mittal Museum of Indian Art, Hyderabad)

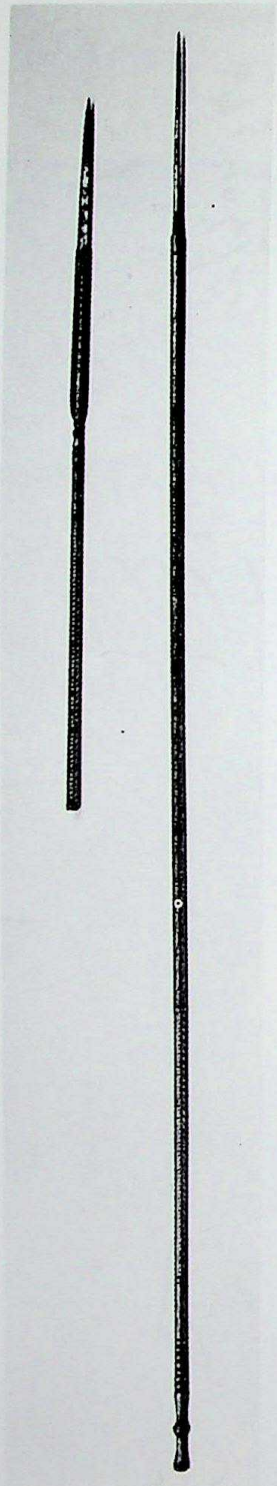
Pl. LXXVII — Horse-shaped handle of a dagger, made of dark green jade and engraved with floral design, part of the blade is visible, Mughal, Delhi, *c.* 1670 A.D.



Pl. LXXVIII — A *jamadhar* of watered steel blade. The ivory sheath is fitted with golden plates all over. It carries three smaller knives. Delhi, Mughal, *c.* 1650 A.D. (National Museum, New Delhi Collection)



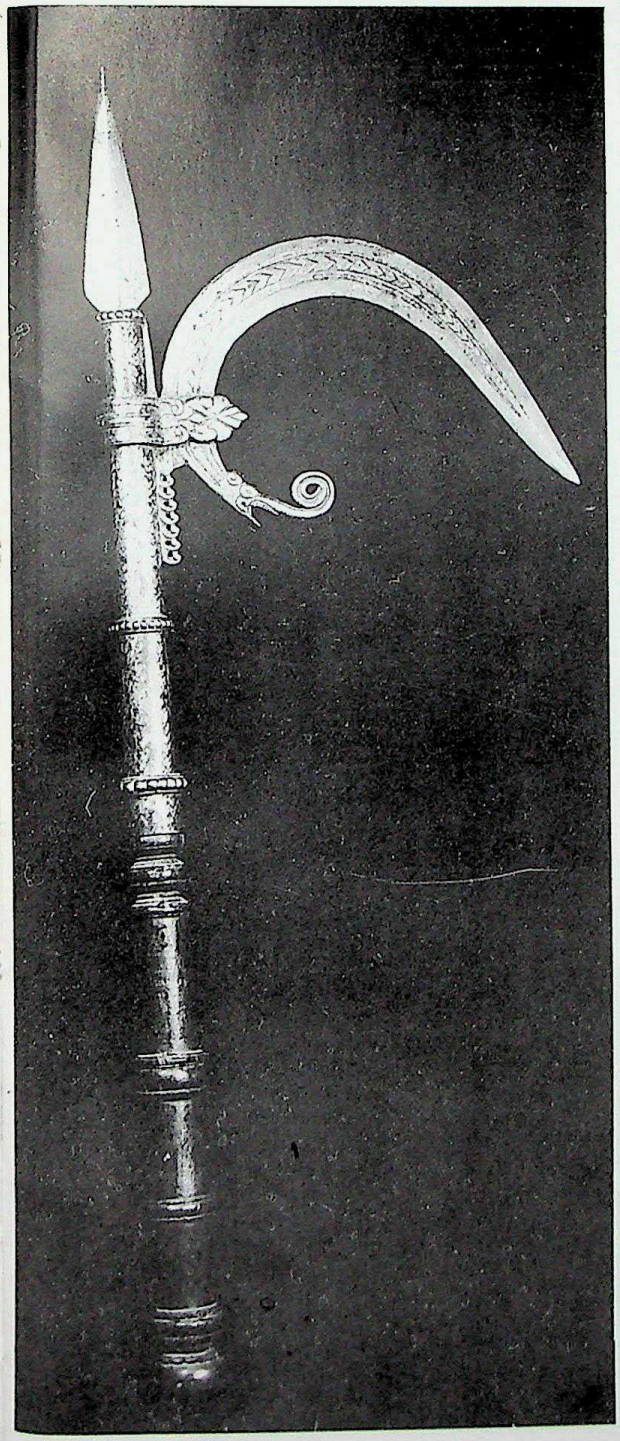
Pl. LXXIX — Cavalry spear. Small leaf-shaped blade has a sheath; wooden shaft has a central grip. North India, 17th century A.D.



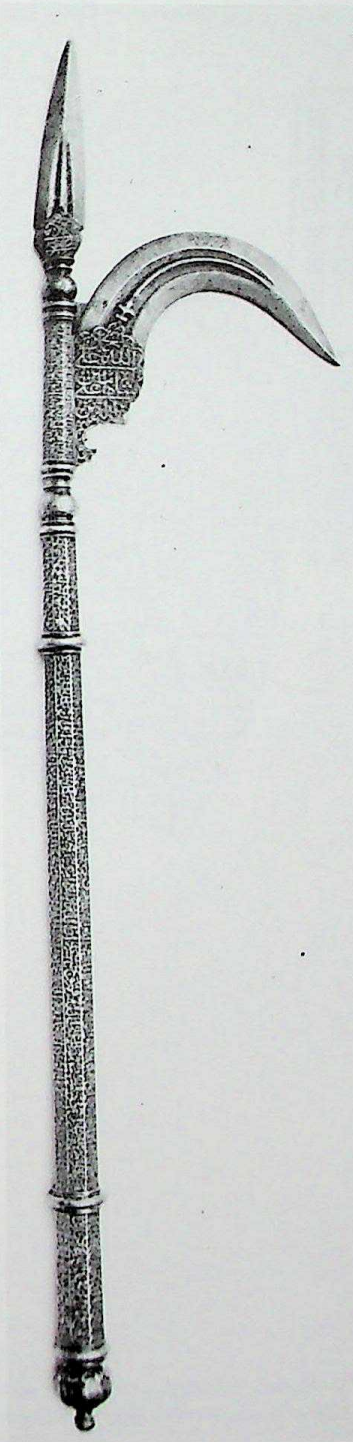
Pl. LXXX — *Barachhā* in two pieces. It is made completely of steel. Long leaf-shaped blade is ornamented. North India, 17th century A.D.

Pl. LXXXI — Spear-head, triangular blade has the figure of Ambā riding a lion. The shank is damascened in gold. Rajput, Rajasthan, 17th century A.D.

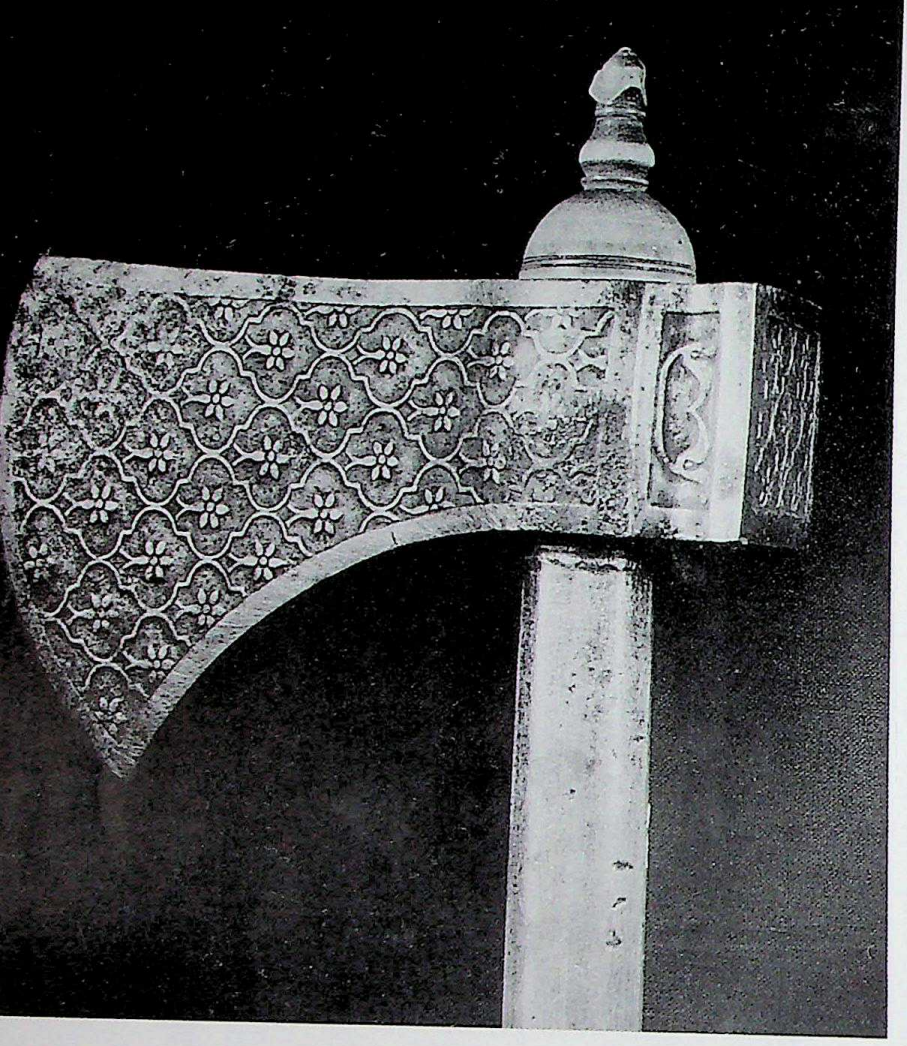
Pl. LXXXII — Elephant-goad, leaf-shaped central blade, the curved blade is shaped like a crocodile. South India, late 17th century A.D.



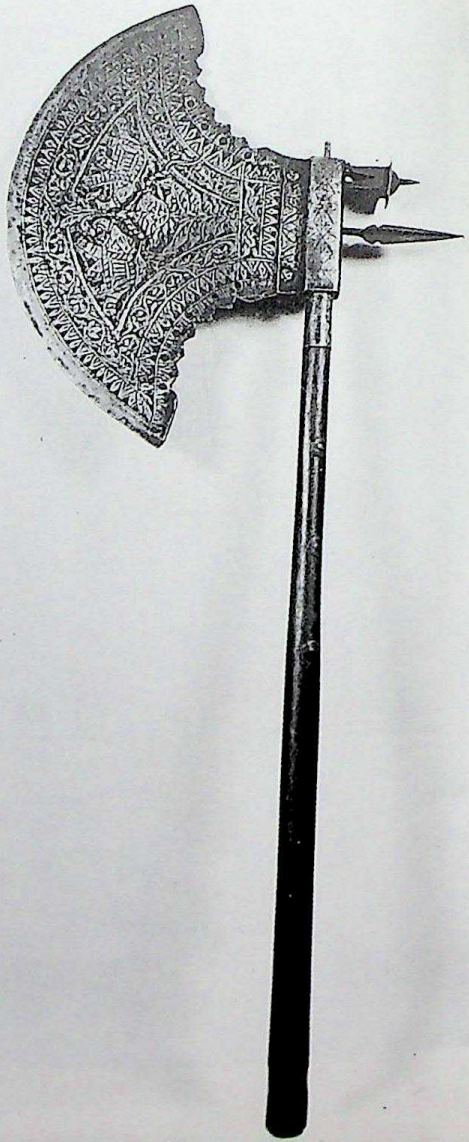
Pl. LXXXIII — Elephant-goad completely of metal; the handle is chiselled all over. North India, late 17th century A.D.



Pl. LXXXIV — *Gurj*, six-petalled metallic flower forms the head surmounted with a pointed spike. Plain rod of metal, Maharashtra, 17th century A.D.(National Museum, New Delhi Collection)

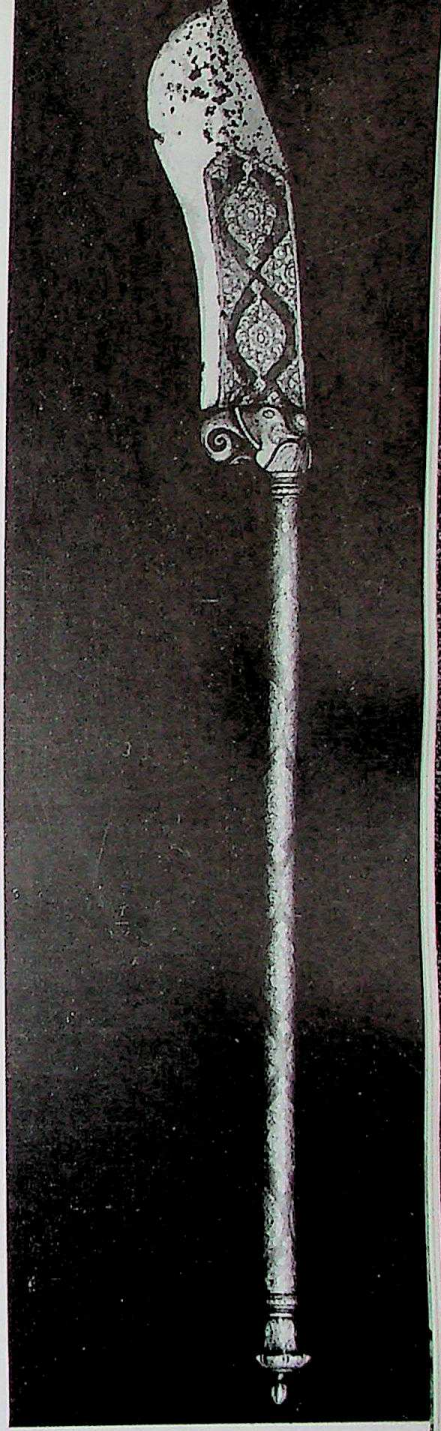


Pl. LXXXV — Upper part of the battle-axe engraved with floral and creeper design. Metallic hilt. Rajasthan, 18th century A.D.



Pl. LXXXVI — Battleaxe; crescent-shaped blade engraved all over with floral, creeper and elephant design. Handle of wood. North India, 18th century A.D.

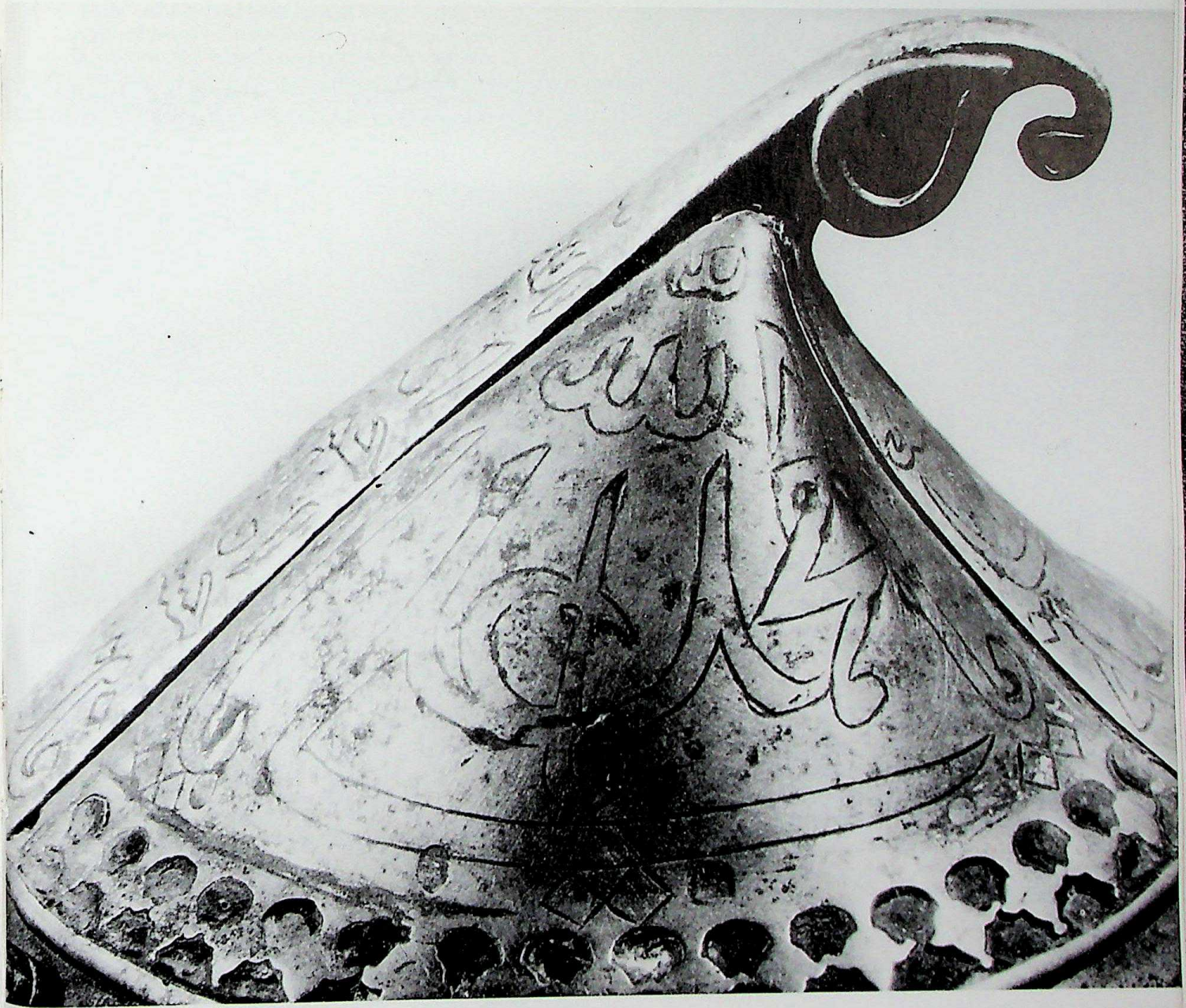
Pl. LXXXVIII — *Bhuj*, blade damascened in gold in floral design; metallic handle is similarly ornamented. Bhuj, Gujarat, late 17th century A.D. (National Museum, New Delhi Collection)



Pl. LXXXVII — Personal battleaxe of Nādir Shāh bearing his name and title in gold. Metallic handle is damascened in gold in floral design. 1739 A.D. (National Museum, New Delhi Collection)

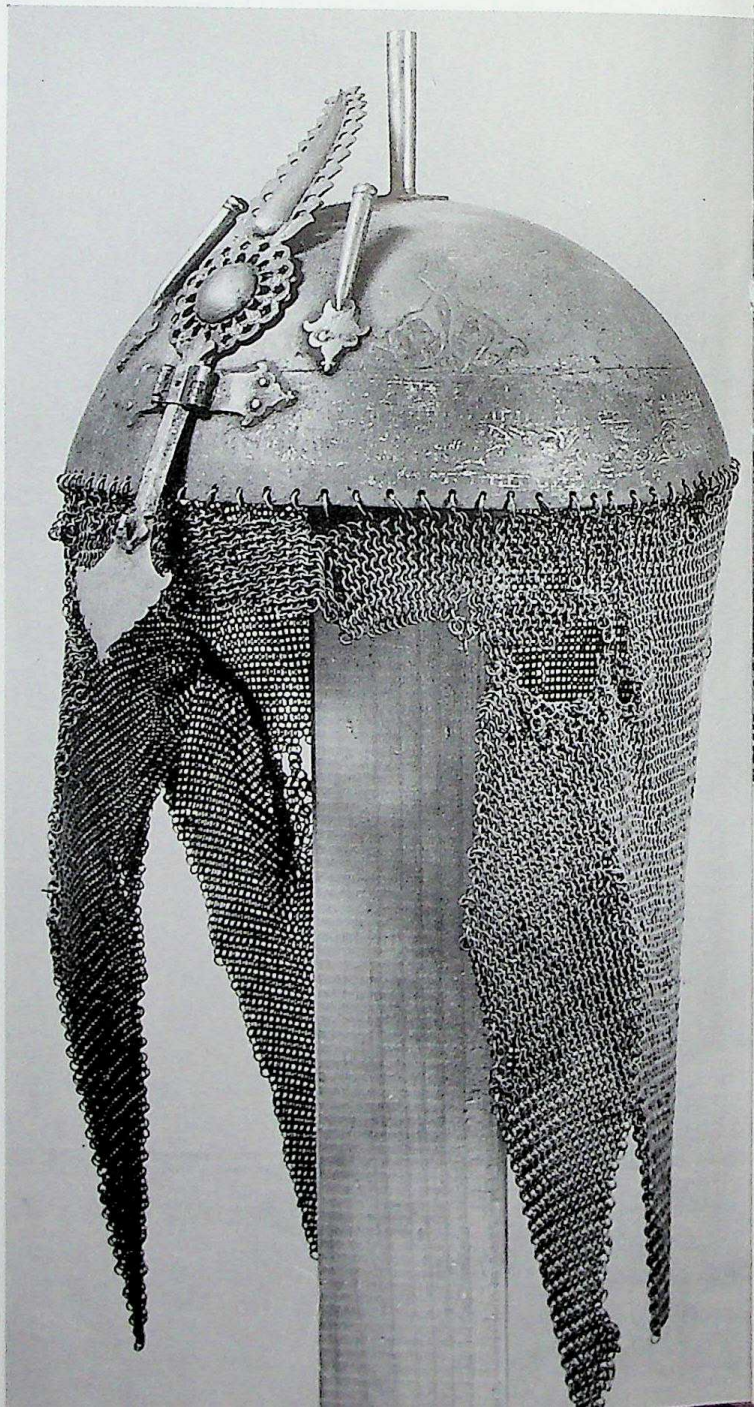
Pl. LXXXIX — Indo-Turkish egg-shaped helmet (viewed from the back) inscribed all over. The fixed spike curved at the tip bears the names of Allah, Muhammad, Ali, Fatima, Hasan and Hussain in Naskh script and Arabic language. Delhi Sultanate period, 15th century A.D. (National Museum, New Delhi Collection)

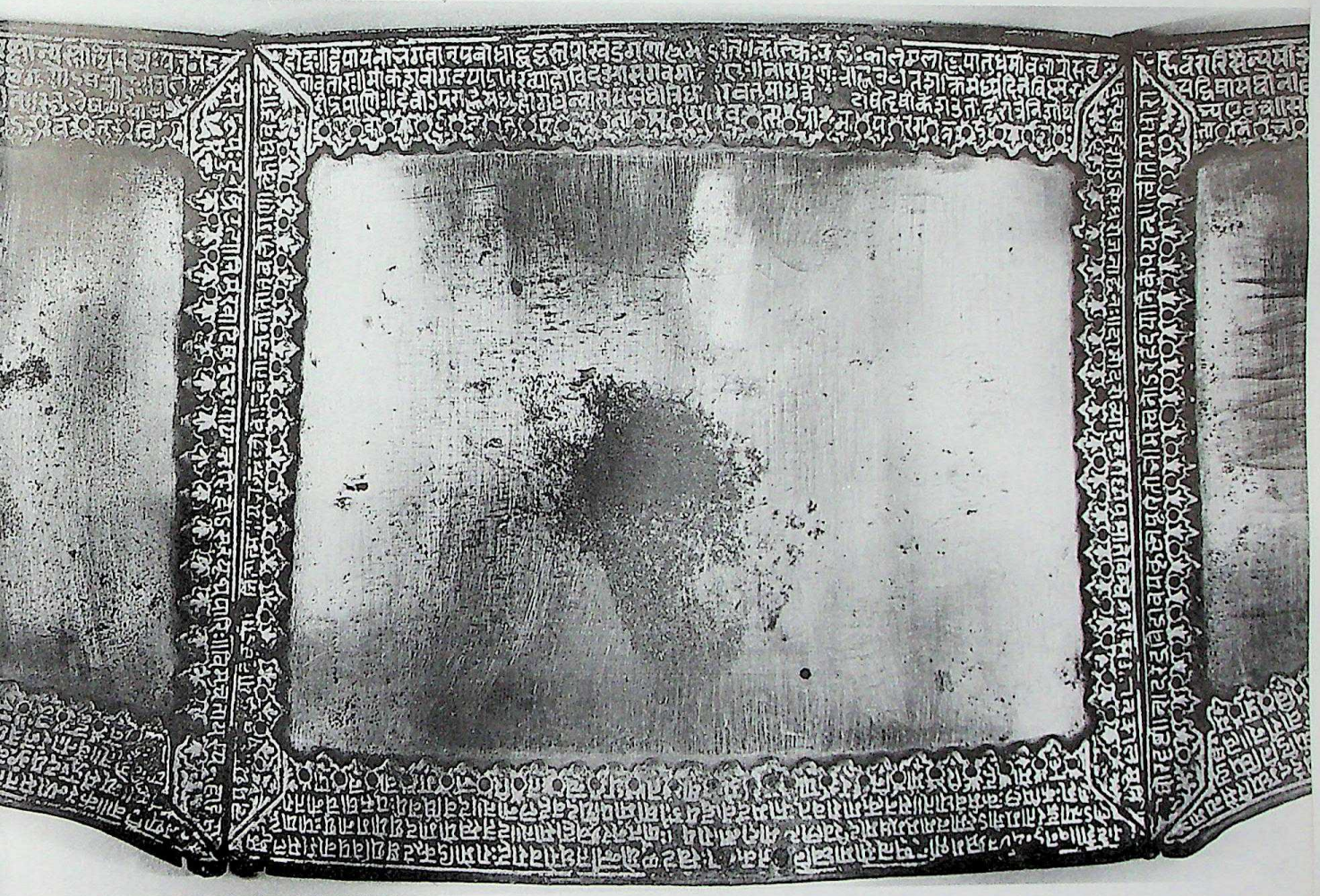
Pl. XC — Close-up of Pl. LXXXIX



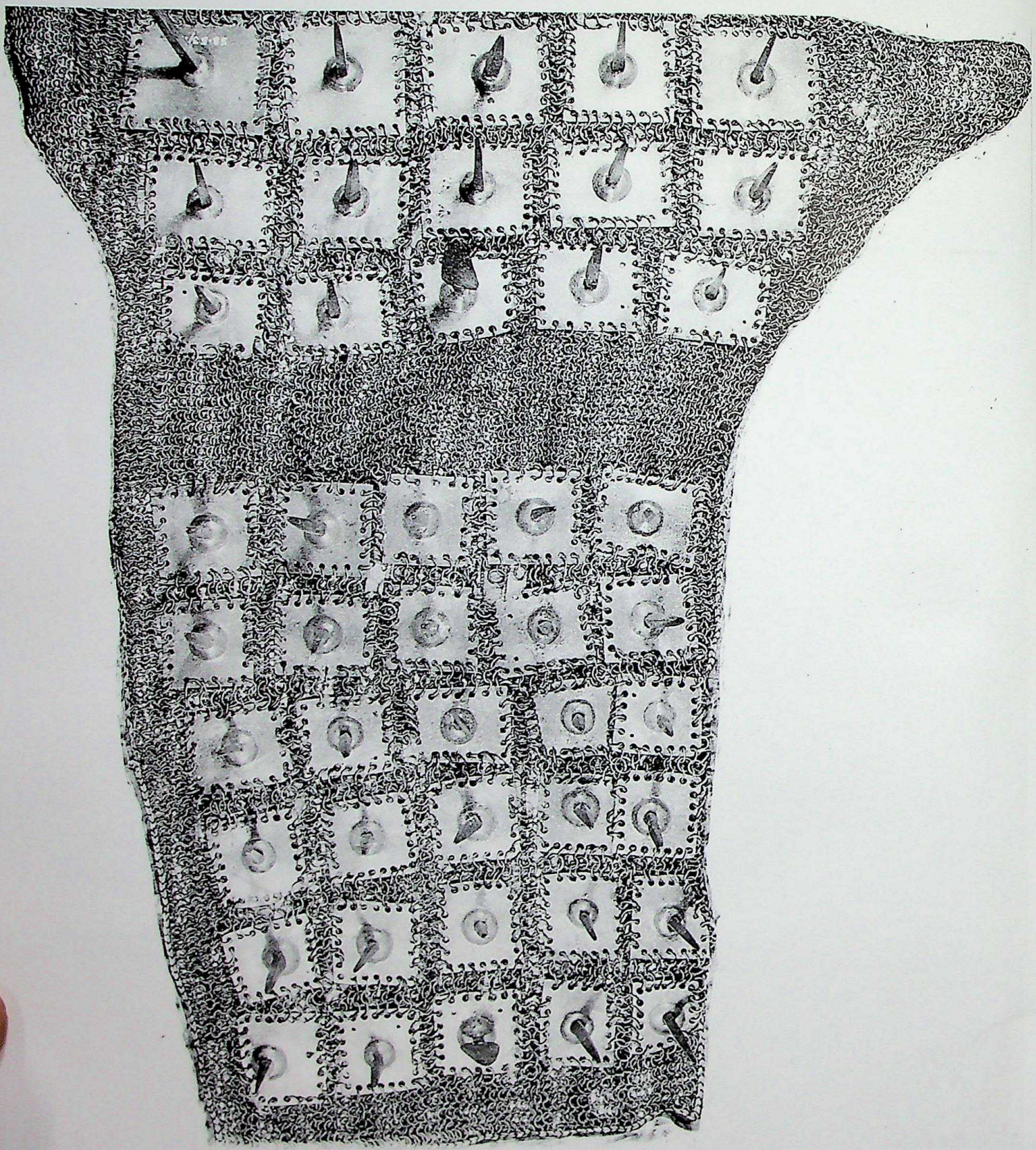
Pl. XCI — *Khud*, dome-shaped helmet, borders damascened in gold floral design; camail of interlinked mail variety. North India, 17th century A.D.

Pl. XCII — *Khud*, hemispherical bowl with two plume-holders in between a nose-guard with set-screw. The upper terminal of the nasal ends in a pine-shaped ornament of perforated steel. Long camail of interlinked iron links. North India, mid. 17th century A.D. (National Museum, New Delhi Collection)





Pl. XCIII — One of the *chār-āinā* plates of Damascus steel on the borders of which the verses from the *Nārāyaṇa Kavacha* (*Skandha* VI, chapter 8 of the *Bhāgawat*) are inscribed in the Sanskrit language and Devanāgarī script. Rajput, Rajasthan, 18th century A.D. (National Museum, New Delhi Collection)

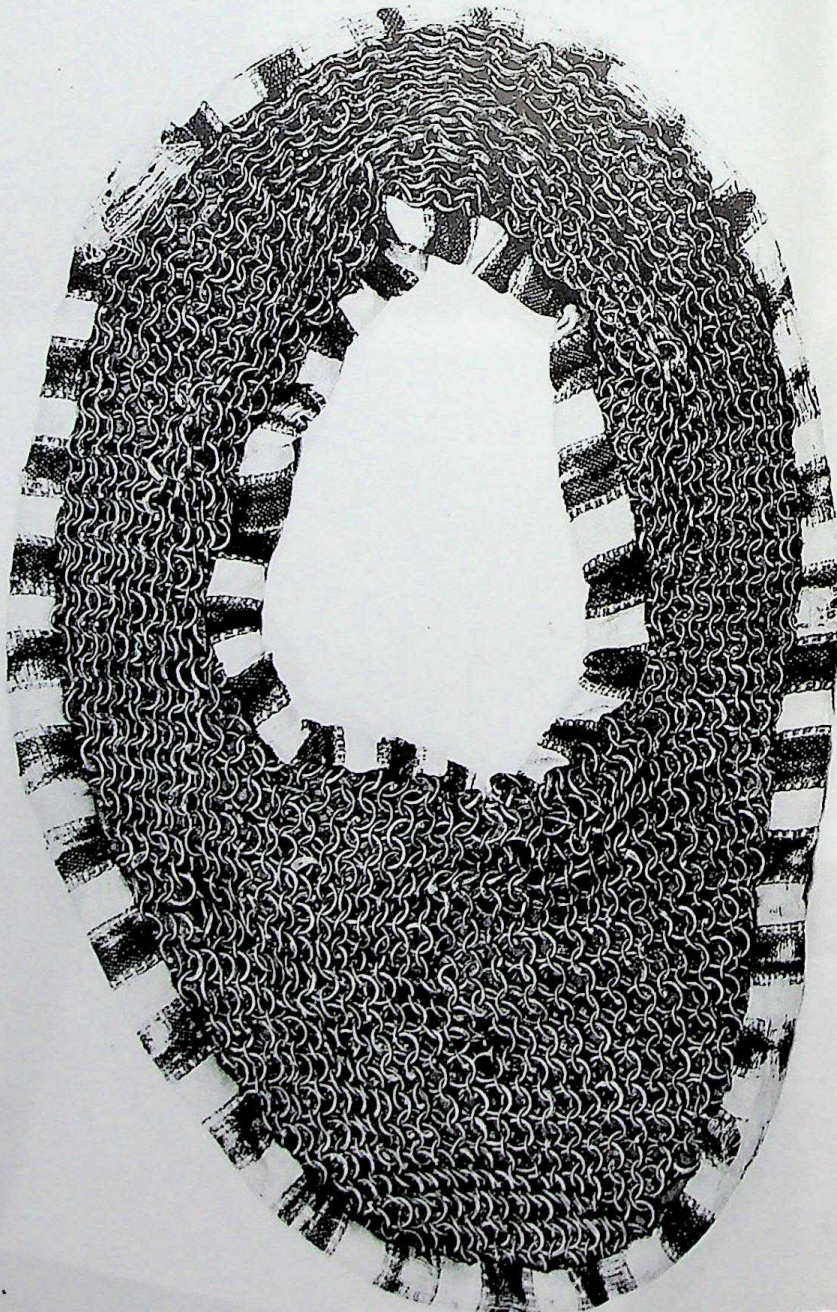


Pl. XCIV — Armour to protect the back. Pointed spikes are fitted. Rajput, *c.* 1720 A.D. (National Museum, New Delhi Collection)

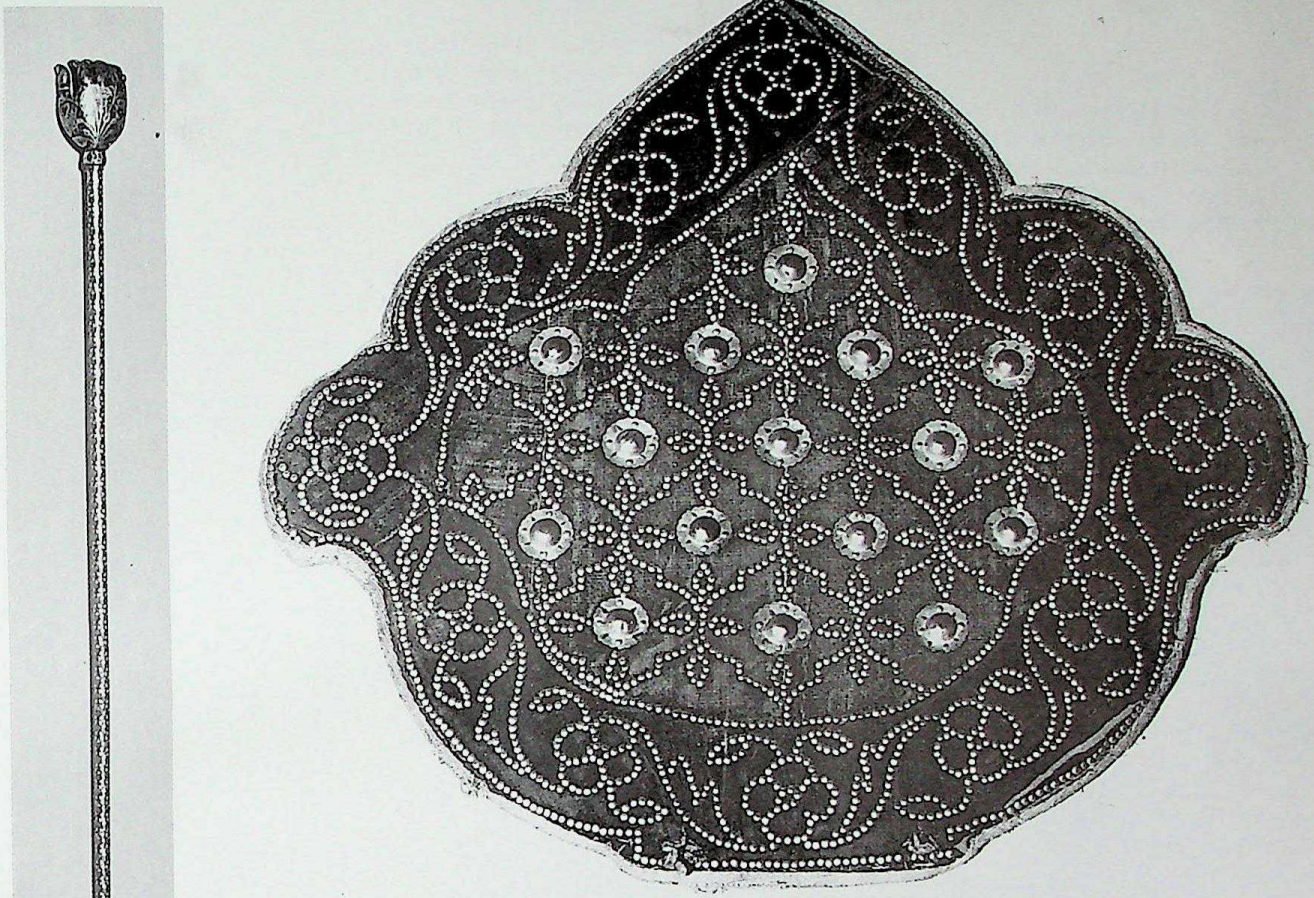
Pl. XCV — Waist-coat armour of Aurangzéb, made of Damascus steel in two halves. It bears the name of Aurangzéb. Inside lining is of stuffed cotton. Mughal, 1700 A.D. (National Museum, New Delhi Collection)

Pl. XCVI — Details of Pl. XCV showing the name of Aurangzéb.

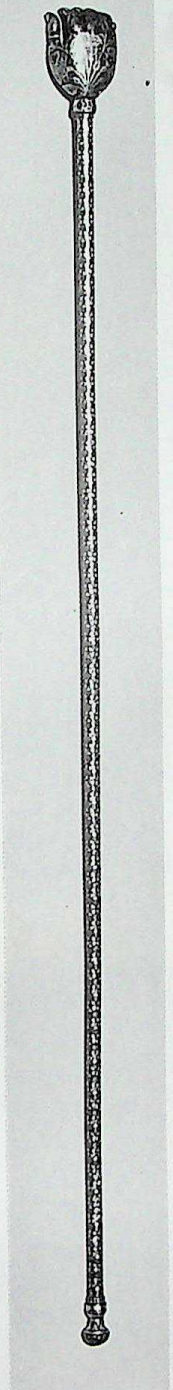
Pl. XCVII — Knee-cap of metal shaped like a miniature helmet. The bayonet-shaped spike is screwed at the top. The surface is engraved with floral design and human figures. Mughal, early 17th century A.D. (National Museum, New Delhi Collection)



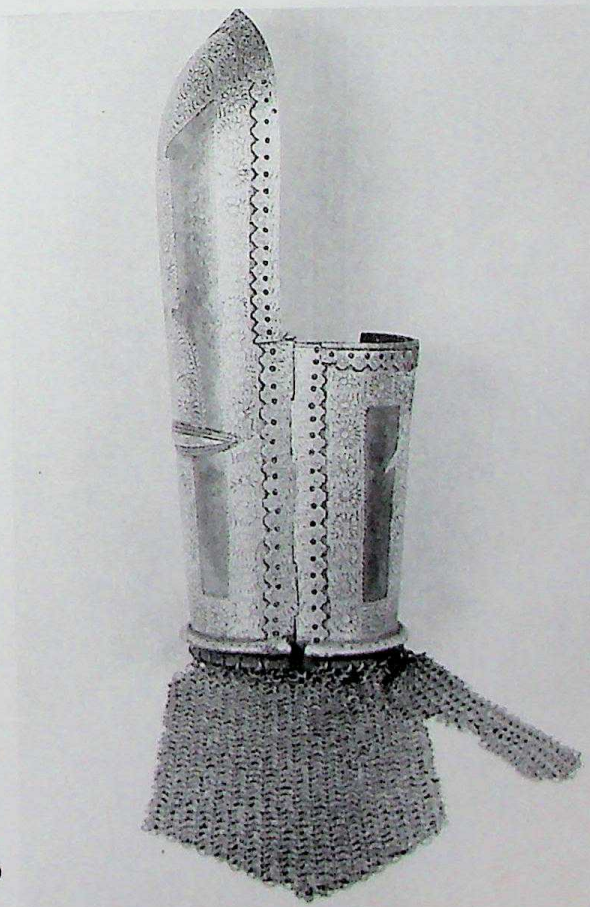
Pl. XCVIII. — Foot-armour of interlinked chain mail, the outer and inner borders as well as the linings are of silk stuffed with cotton wool. Mughal early 18th century A.D. (National Museum, New Delhi Collection)



Pl. C — Shoulder-guard (part of the complete brigandine suit) made of quilted fabric studded all over with gilt nails in floral pattern. Rājput, 18th century A.D. (Wallace Collection, London)



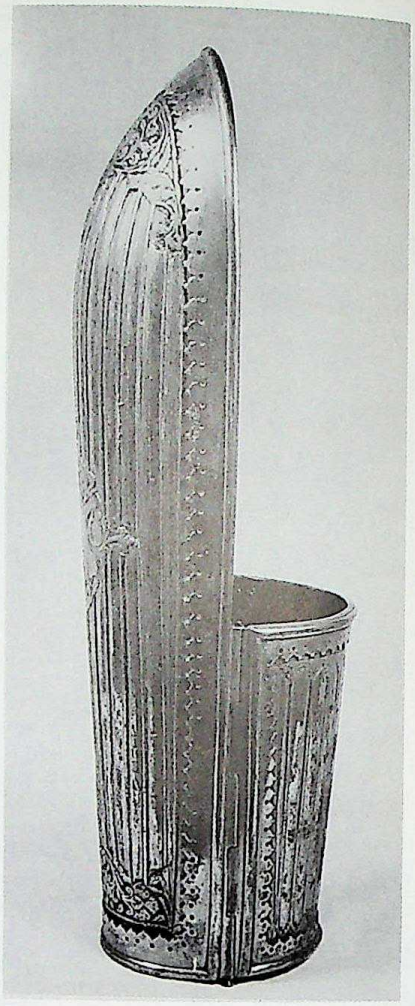
Pl. IC — Back-scratcher shaped like the palm. Completely of metal, it is damascened all over in gold. Hyderabad, 17th century A.D.



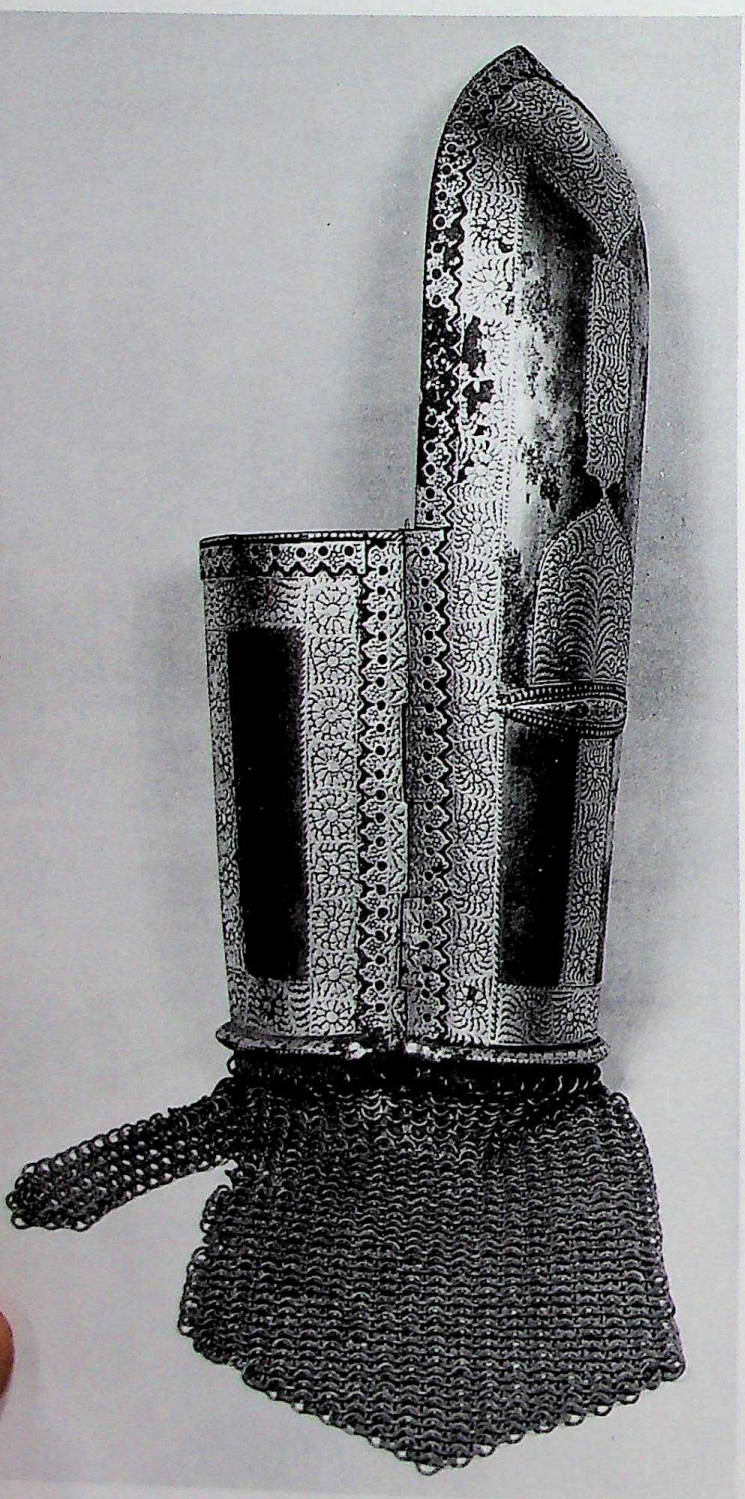
Pls. CI & CII — A pair of *bājūband*, the arm plate and the broad plate attached to the wrist are damascened in floral design in gold. The gauntlet is of interlinked chain mail, Rājput, Rajasthan, 18th century A.D. (National Museum, New Delhi Collection)

For CII (See overleaf)

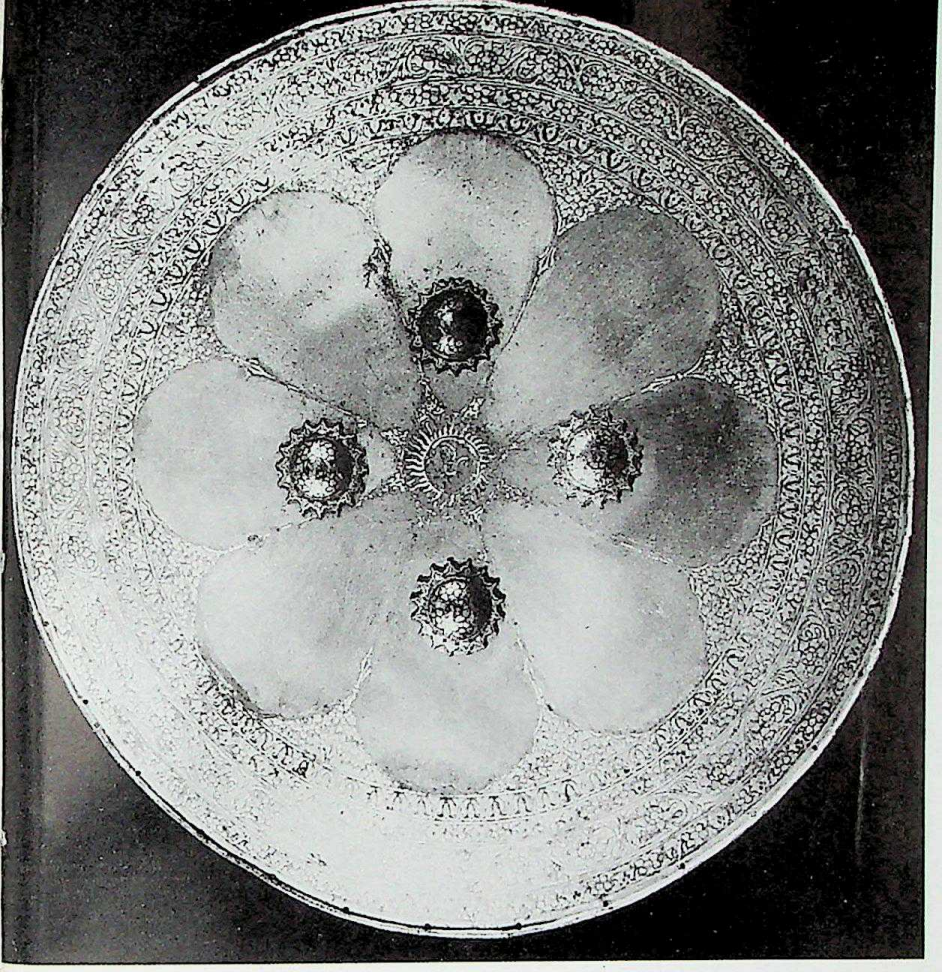
Pl. CIII — *Bājūband* made of two pieces of steel hinged together; corrogated and engraved with floral design. Rājput, Rajasthan, 18th century A.D. (National Museum, New Delhi Collection)



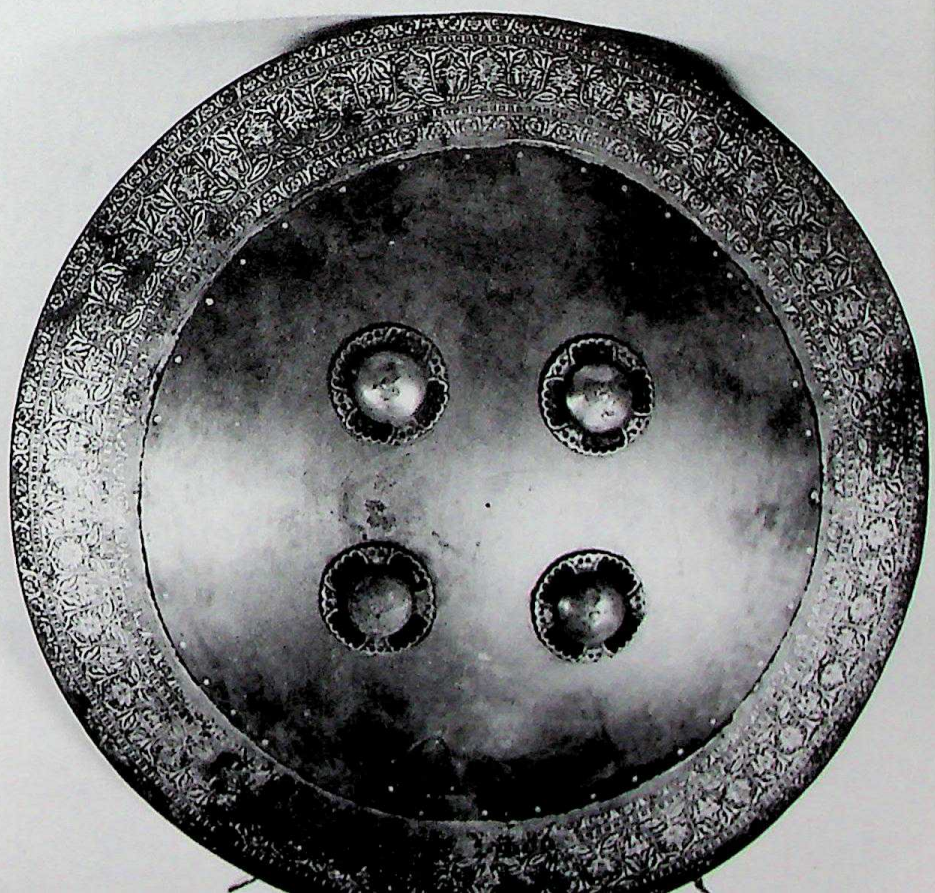
Pl. CII



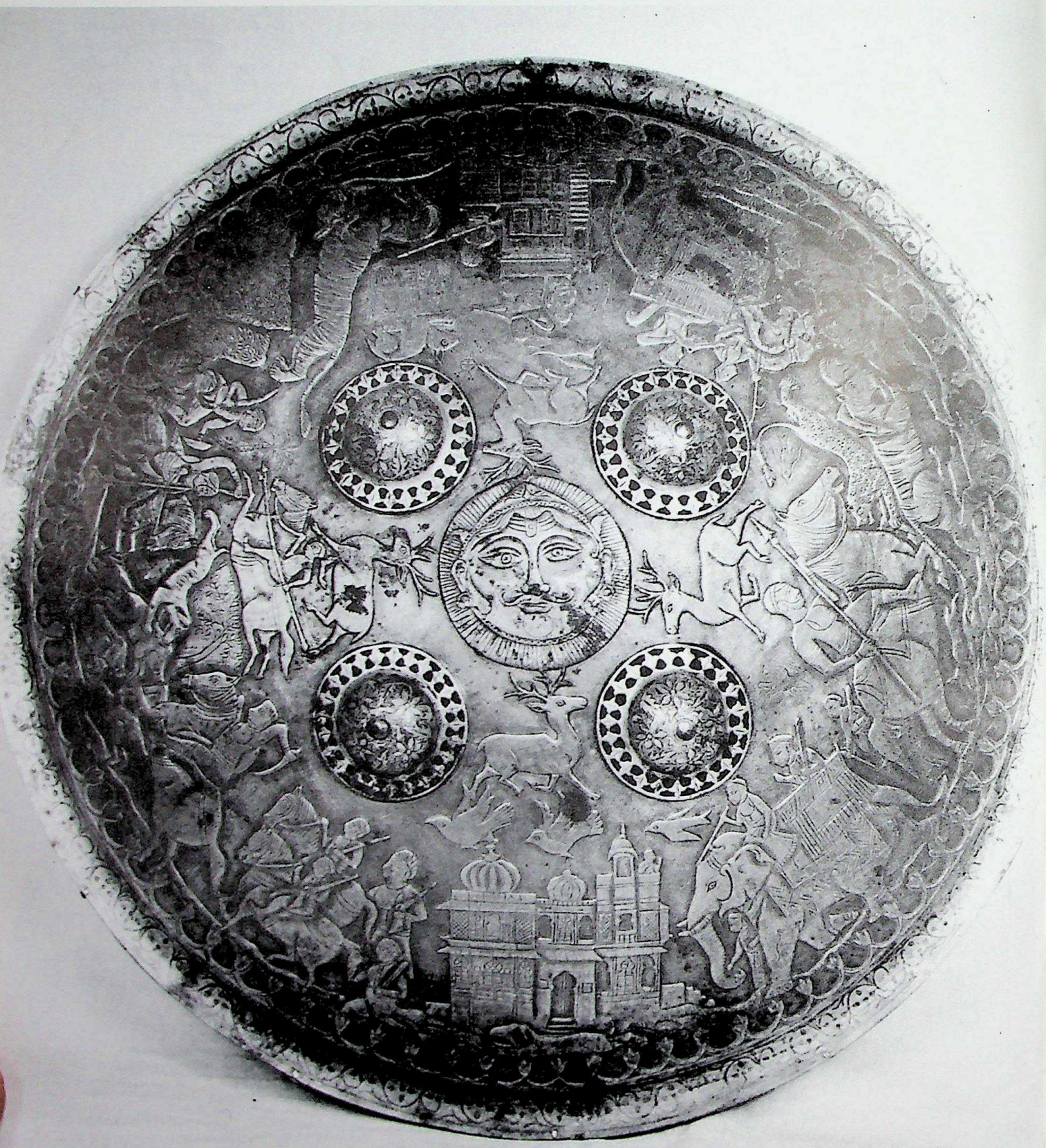
Pl. CIV — Details of CIII depicting Ambā on a tiger.



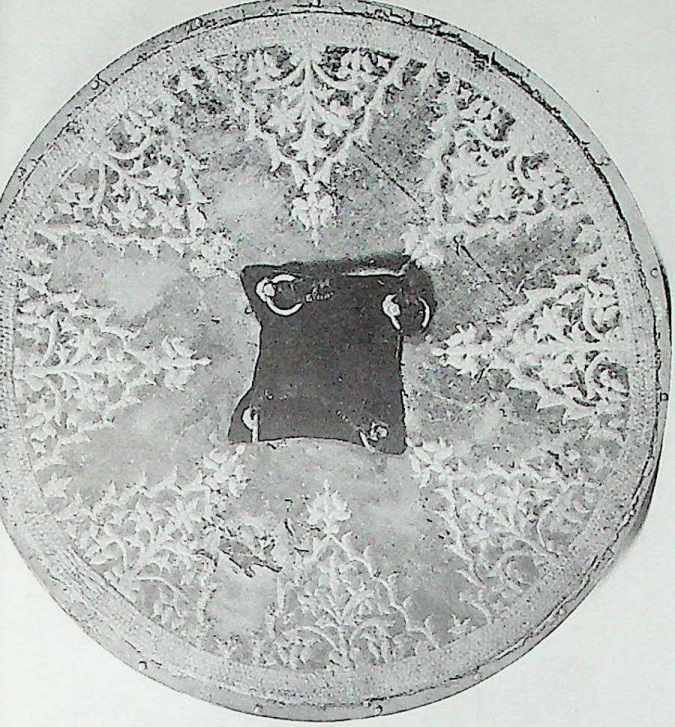
Pl. CV — Circular, less convex shield of Damascus steel with borders damascened in gold with floral and creeper design. Four bosses of Damascus steel are similarly damascened. Mughal, Lahore, early 18th century A.D. (National Museum, New Delhi Collection)



Pl. CVI — A circular shield of Damascus steel. The borders are damascened in floral and creeper design in gold. Four steel bosses are also damascened. Mughal, early 18th century A.D. (National Museum, New Delhi Collection)



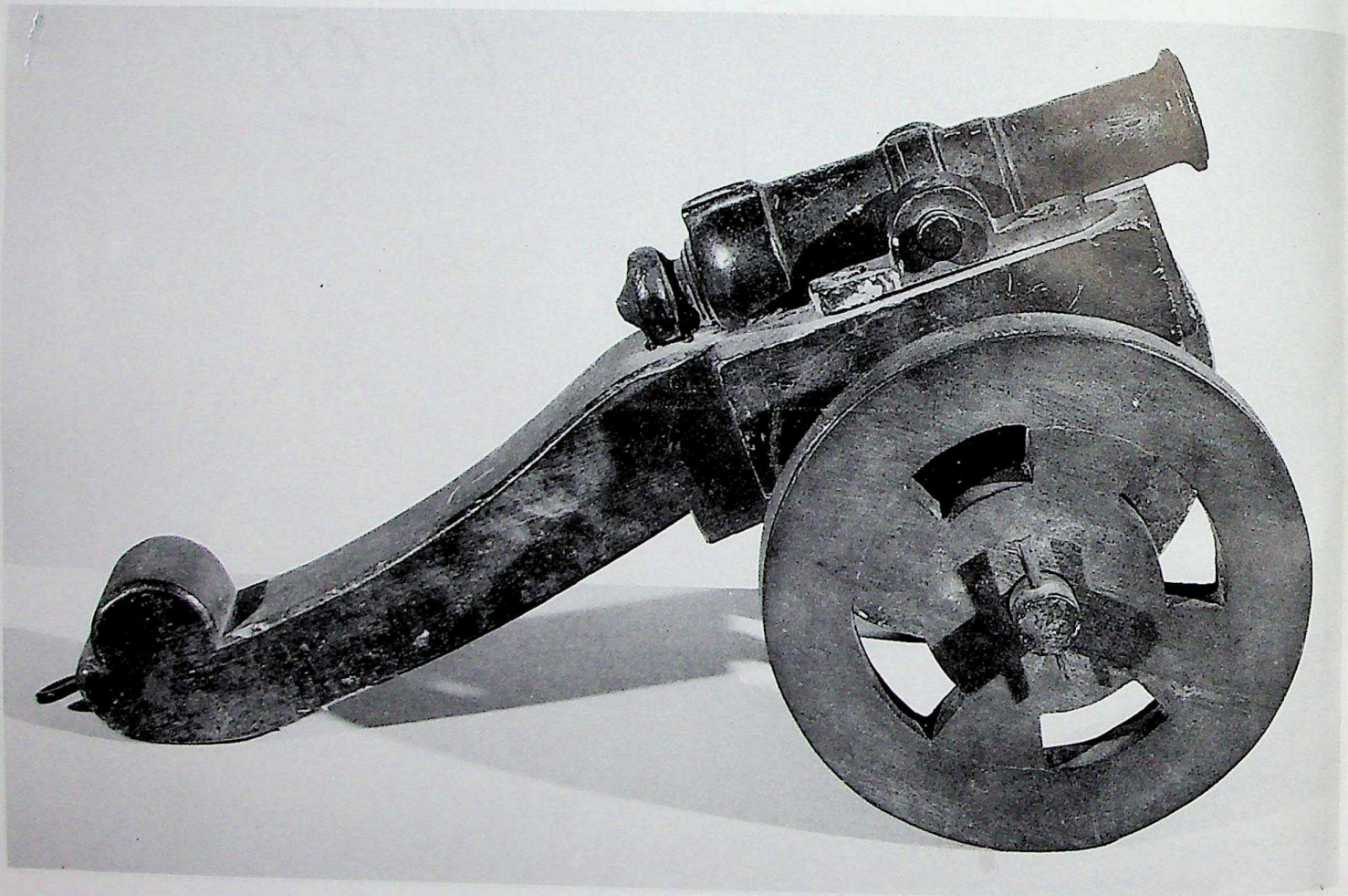
Pl. CVII — A circular metallic shield engraved all over with hunting (*shikārgāh*) and palace scenes. Four steel knobs have pierced borders. The central figure, the anthropomorphic, Rajasthan, *c.* 1670 A.D. (National Museum, New Delhi Collection)



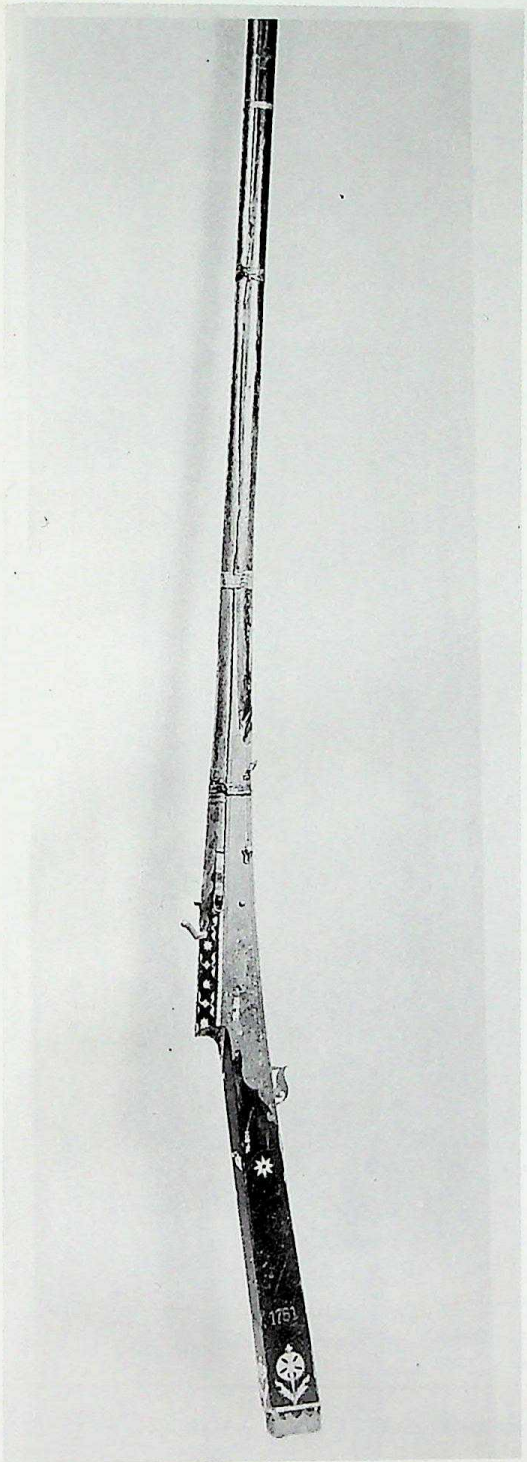
Pl. CVIII — Inside view of a shield, the velvet lining is embroidered. A square cushion is padded to which were attached two leather loops, which themselves were screwed to four rings which served as the washers for the knobs on the outside. Mughal, 17th century A.D.

Pl. CIX — A metallic circular shield of Damascus steel with its borders engraved with floral and creeper design; four bosses have perforated borders. North India, 17th century A.D.(National Museum, New Delhi Collection)

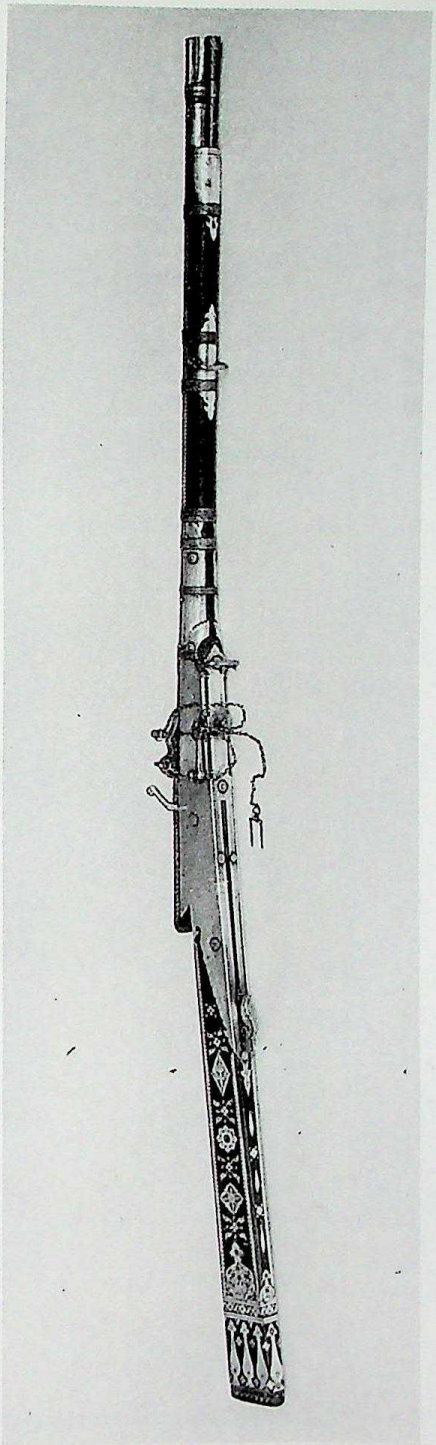
Pl. CX — Details of Pl. CIX showing the central part with four knobs.



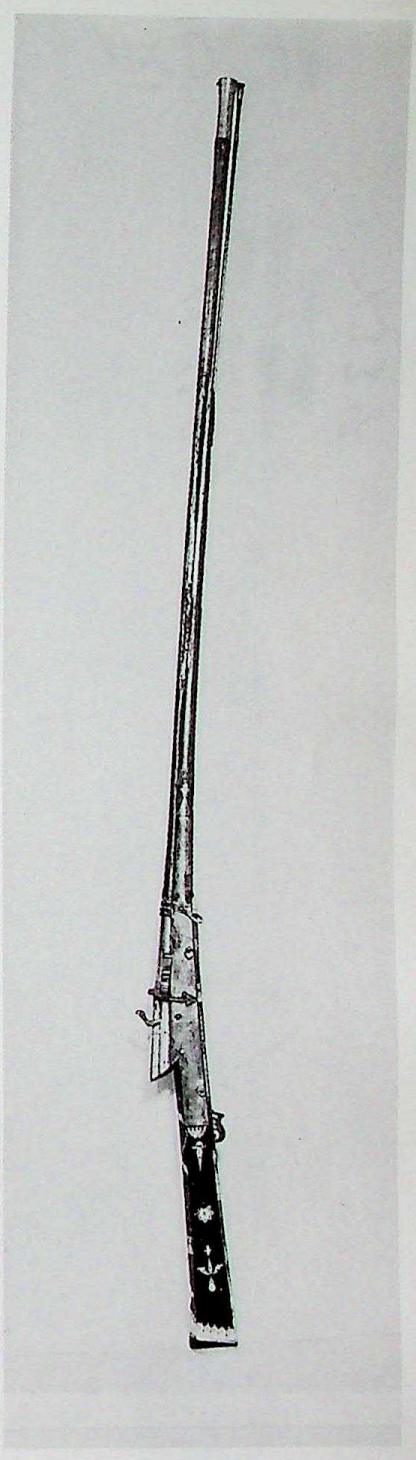
Pl. CXI — A miniature cannon mounted on a two-wheeled wooden cart. *c.* 1780 A.D.



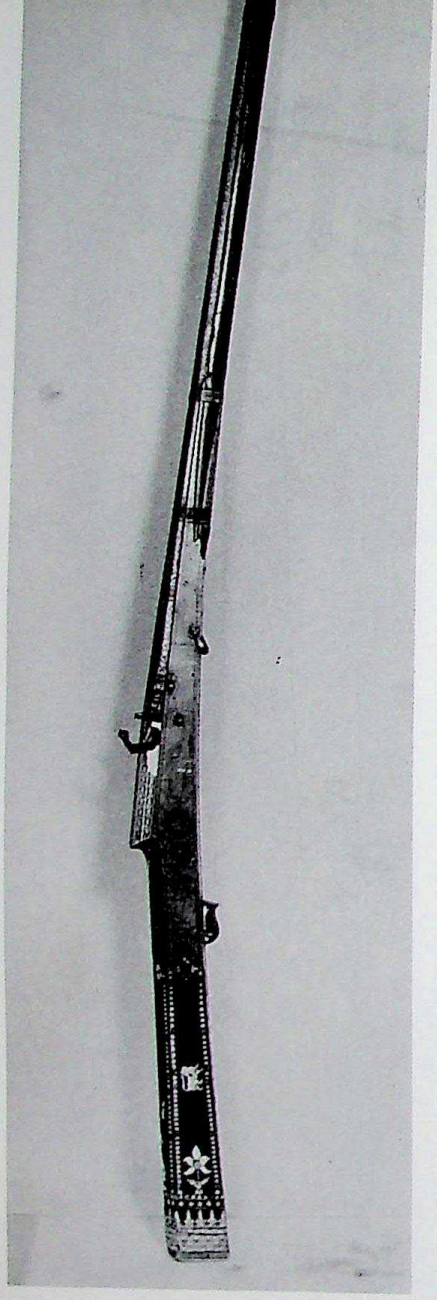
Pl. CXII — Single-barrelled, muzzle-loading matchlock gun. Rectangular wooden butt is inlaid with ivory flowers, *c.* 1700 A.D.



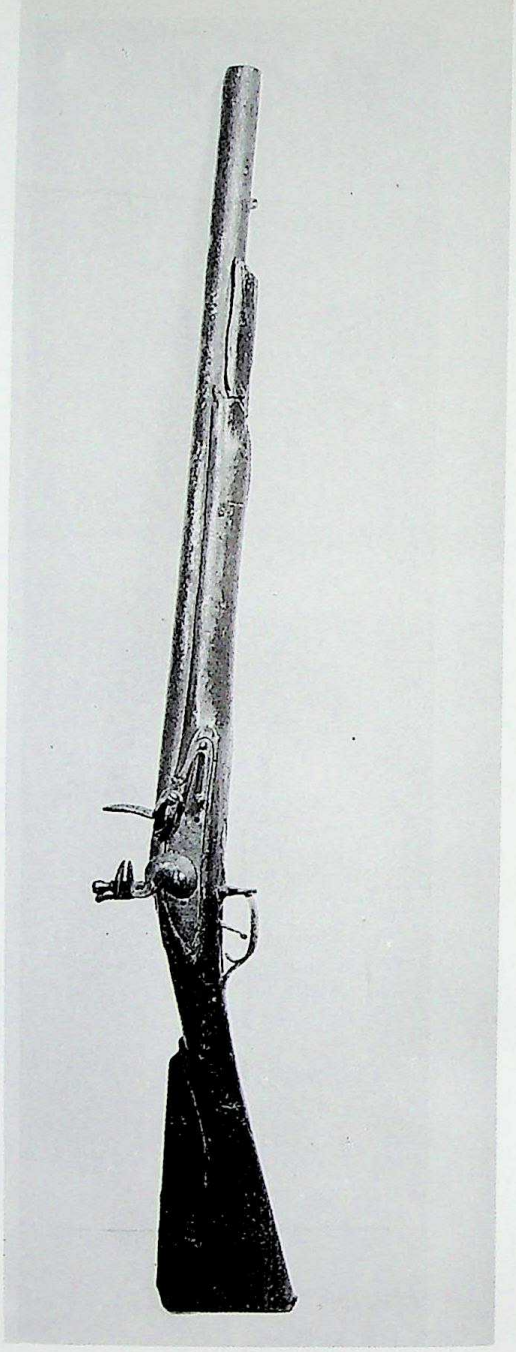
Pl. CXIII — Single-barrelled, muzzle-loading, matchlock gun. Rectangular wooden butt is inlaid with ivory. Muzzle-loading rod is attached, *c.* 1650 A.D.



Pl. CXIV — Single-barrelled, muzzle-loading matchlock gun. Rectangular wooden butt is inlaid with ivory, *c* 1700 A.D.

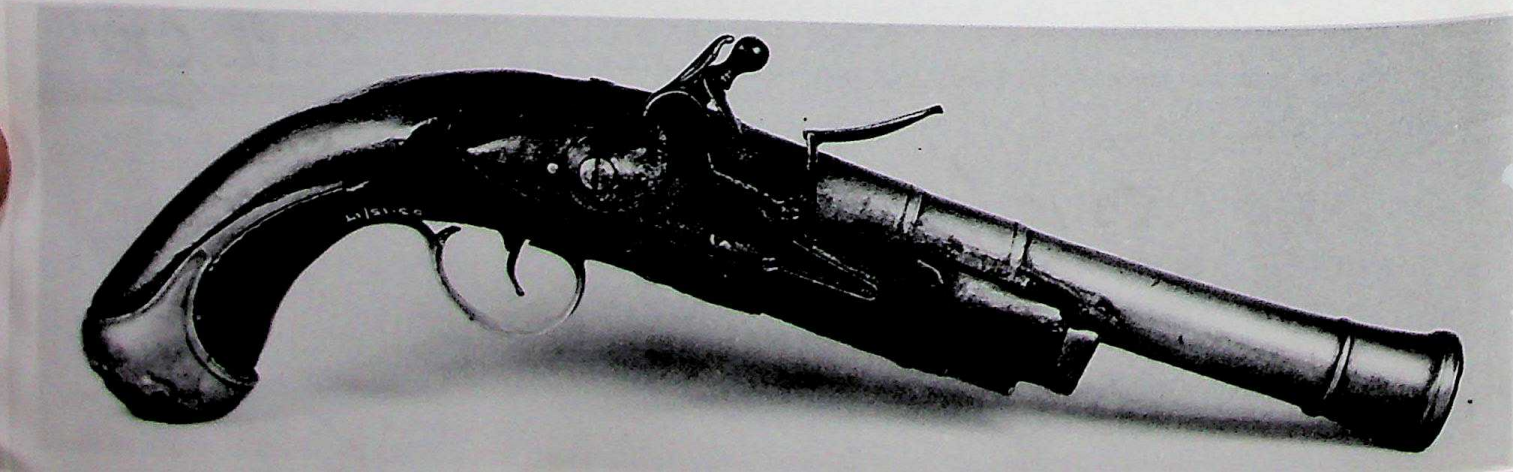


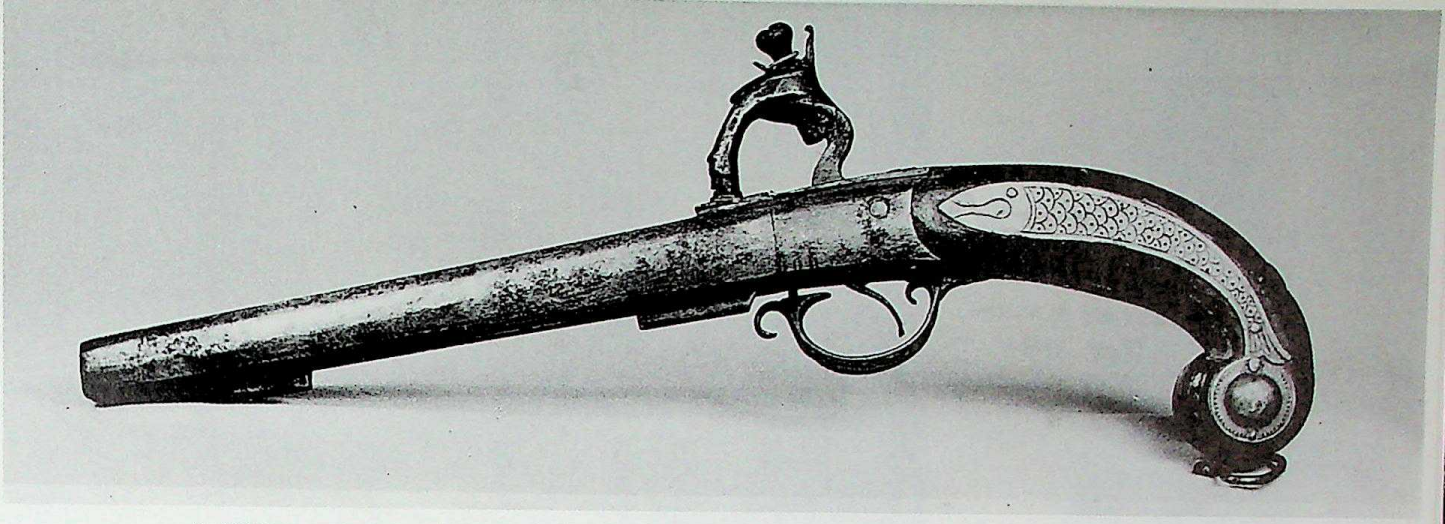
Pl. CXV — Single-barrelled, muzzle-loading matchlock gun; wooden stock is inlaid with ivory. North India, *c.* 1700 A.D.



Pl. CXVI — Single-barrelled, muzzle-loading flintlock gun. Plain wooden furniture. *c.* 1700 A.D.

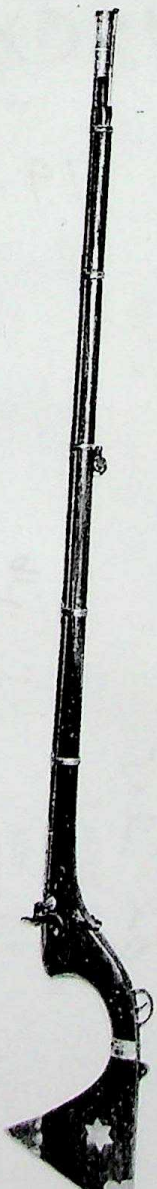
Pl. CXVII — Single-barrelled, muzzle-lading flintlock pistol; barrel is made of gun metal; wooden furniture. *c.* 1710 A.D.





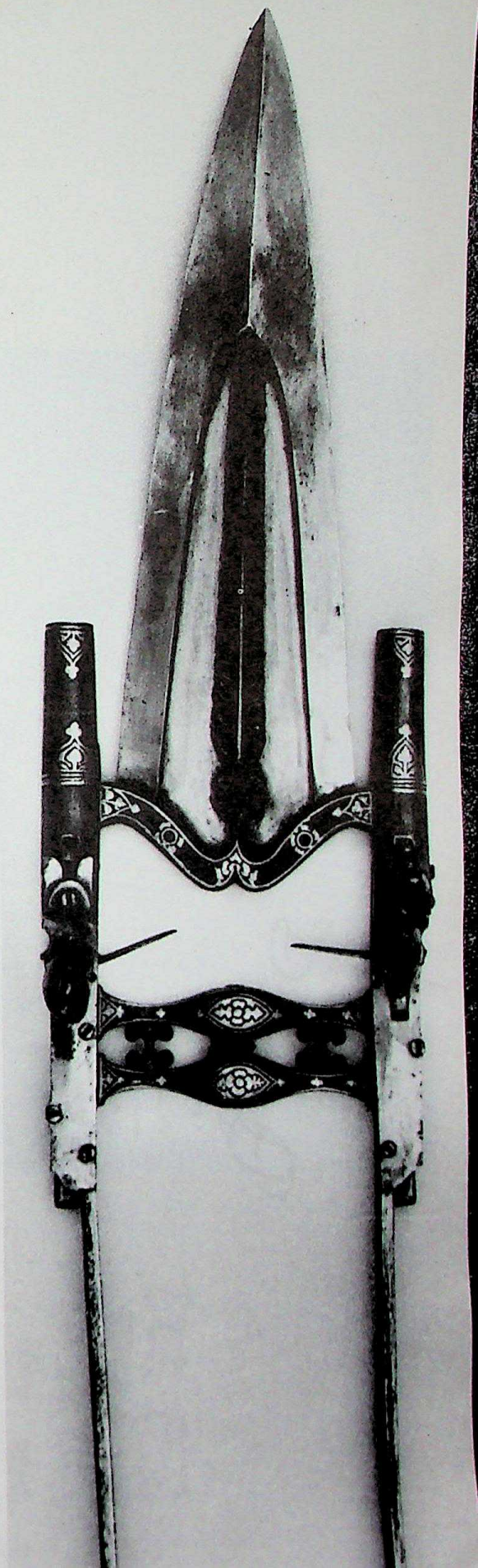
Pl. CXVIII — Single-barrelled, muzzle-loading pistol. The flintlock mechanism was later converted into percussion cap. 19th century A.D.

Pl. CXIX — Percussion-cap, muzzle-loading, single-barrelled gun. Wooden butt is curved like a crescent. Sindh, *c.* 1850 A.D.

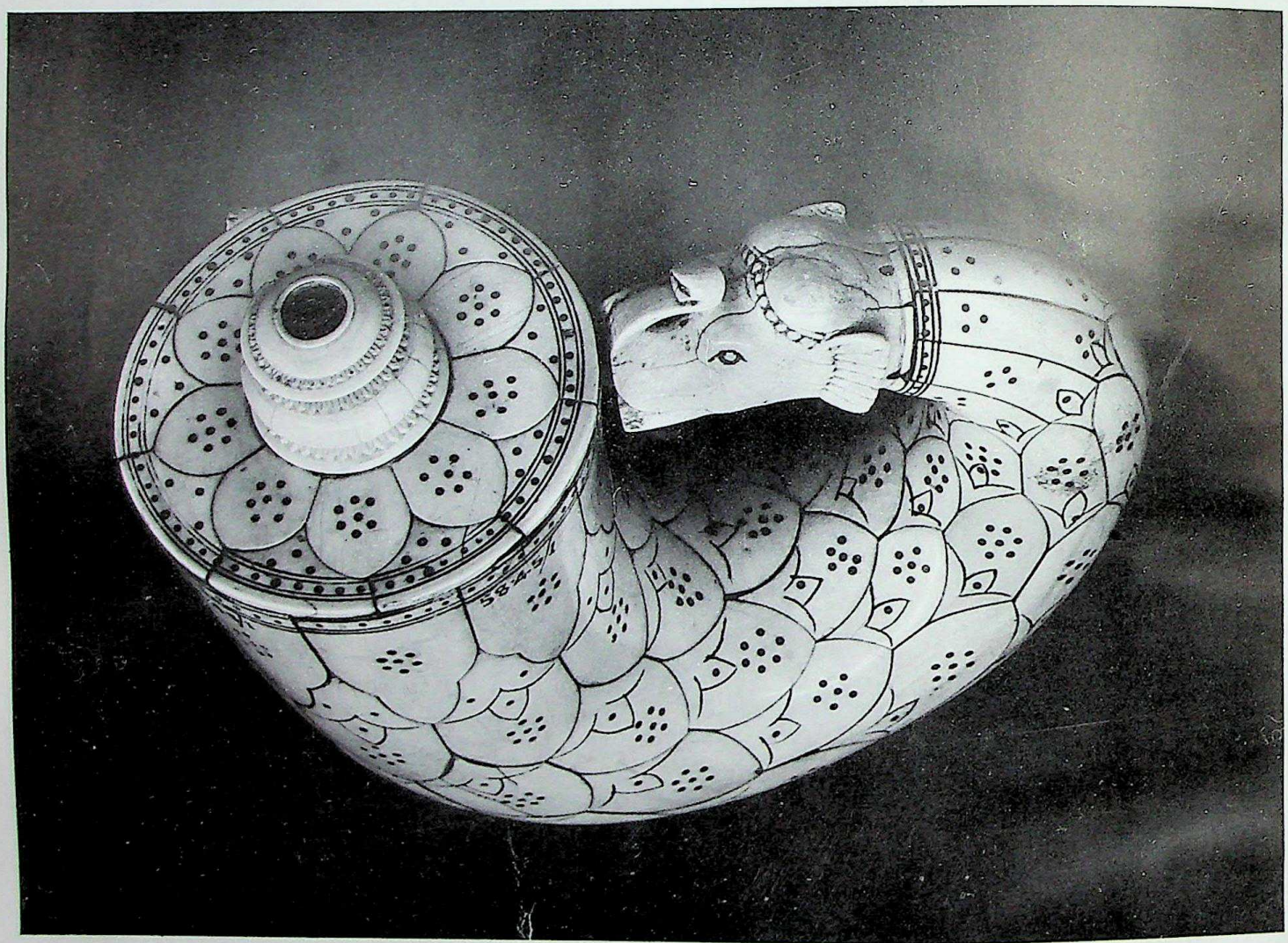


Pl. CXX — Details of Pl. CXIX. Percussion-cap mechanism is clearly visible.

Pl. CXXI — Details of the barrel of Pl. CXIX



Pl. CXXII — *Jamadhar*, triangular blade of watered steel. Two percussion-cap pistols fitted on the handle, Delhi, 19th century A.D. (National Museum, New Delhi Collection)



Pl. CXXIII — Ivory gunpowder flask terminating into the head of an elephant. Ornamented all over with dot and leaf design. Mughal, late 17th century A.D. (National Museum, New Delhi Collection)

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